University of Alberta

Self-esteem and Mastery as Moderators of the Relationship Between Work and Non-work Stressors and Depression

By

©

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DEDICATION

This dissertation is dedicated to my granddaughter, Eva Grace Kay and to the memory of my father-in-law, Philip Leonard and my mother, Patricia Lloyd.

ABSTRACT

This research focuses on how self-esteem, mastery, coping behaviours, and social support may reduce the effects of work and non-work related stress on depression. It proposes a more comprehensive model of the stress process that looks at the antecedents of stress, immediate sources of stress and moderators of stress in explaining the variation in depression. Using Adlerian, Attachment, and Parental Acceptance and Rejection Theories, it is demonstrated that the process of childhood development shapes adult concepts of the self that influence how they perceive and make sense of the world. By early adulthood, individuals have a well –established sense of self-esteem, mastery that may or may not protect them in the face of stressors. Individual differences in personal resources, therefore, may help to explain why some people cope in the face of similar stressors, while others do not.

This research builds on the job demand-control-support model of work stress as outlined by Karasek, et al. (1986) and also examines the home/work interface, and other work and non-work related stressors in explaining depression among a random sample of 561 employees in a large municipal department in western Canada. The study revealed that 1) Karasek et al.'s (1986) job demand and control portion of the model was supported by the data, 2) the work social support component of Karasek's model was not supported; 3) personal resources have both independent and moderating effects on depression; 3) the home/work interface has direct effects on depression; 4) general social support reduces the effects of depression; 5) being a victim of harassment increases depressive symptomatology; and 6) being female, in this sample, has a negative relationship with depression. The unique contributions of my model are the findings that 1) personal resources have both an independent and moderating effect in reducing depression; 2) harassment on the job is a significant predictor of depression; and 3) it is important to include subjective measures to help us understand job insecurity or "precarious employment," and 4) the development of a new measure of Karasek's (1979) job strain interaction term. Policy implications and directions for future research are discussed.

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This dissertation would not have been possible without the support of many individuals. First, I would like to thank my husband, Jerry Leonard for his support, at so many levels, to help me realize my long-term goal. Also, I would like to acknowledge the unwaivering support and encouragement of my children, Andrew, Georgia and Mark, and their partners. I appreciate all the ongoing support, care and interest from the rest of my family and friends from Canada, England and Australia.

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CHAPTER 1 – INTRODUCTION: THE PROBLEM OF WORK STRESS

In the late 1990s, the International Labour Organization conducted a major study in five countries to determine how their mental health policies and programs affected their workforce (Gabriel and Liimatainen 2000). All five countries (Finland, Germany, Poland, UK and USA) reported an increase in mental health problems and related costs over the prior decade. In particular, the incidence of depression was found to be increasing at an alarming rate. The data showed that, at any given time, approximately 20% of the adult population had a mental health problem (ibid, p. 4). For all countries, job stress was ranked as the most common work-related health problem.

As Gabriel and Liimatainen (2000) point out, the costs associated with mental health were similar in all five countries. Specifically,

> Governments, employers, employees, insurance companies, and society as a whole bear their share of direct (sick pay, benefits, social security, medical treatments) and indirect costs (loss of productivity and potential output and low morale related to mental health problems)….[For European countries], the cost of mental health … is estimated to be on average 3 to 4% of GNP. In the USA, the estimates for national spending on depression range from $30 to $44 billion, with approximately 200 million days lost from work each year (p. 5).

According to the World Health Organization, there will be even more dramatic increases in mental health disorders in the future (Harnois and Phyllis 2000). Among the factors contributing to this trend are the impact of globalization, issues relating to work-life balance, work stressors and other non-related work stressors. Globalization is leading to increased work demands and more precarious employment arrangements that result in stressful work environments and eventually mental health. It has also been suggested that balancing work and family is becoming increasingly stressful due to the greater involvement of women in the labour force. Both women and men are filling multiple roles involving work and family life. As job and family demands (e.g., childcare and eldercare) increase, more mental health problems are arising in the workplace.

GLOBALIZATION AND INDUSTRIAL RESTRUCTURING

Workers and work organizations in the new millennium are facing increasingly difficult challenges. Globalization and the need to compete in an increasingly technological and rapidly changing world have had major effects on workers and organizations alike. While globalization can be a powerful influence for economic growth, work conditions and the labour market have changed over the past two decades (Harnois and Phyllis 2000, p. 3). Some of the key elements of change are, according to Gordon Laxer (1995, p. 288):

> … the internationalization of production, the harmonization of tastes and standards and the greatly increased mobility of capital and of transnational corporations. Ideological changes emphasize investment and trade liberalization, deregulation and private enterprise. New information and communication technologies that shrink the globe signal a shift from goods to services.

In response to these changes, work organizations have had to rethink their structures and processes to remain competitive. In post-industrial societies, workers are now faced with downsizing, higher rates of contingent employment and increased workloads (Harnois and Phyllis 2000, p. 3). In Canada, these changes are having a major impact on the labour market in terms of quality and quantity of work (Krahn and Lowe 2002, p.36; Duxbury and Higgins 2001, p. vii). There is increasing anxiety among the employed and unemployed over job and income security (Vosko et al. 2003, p. 19; Lewchuk et al. 2003, p. 25; Krahn and Lowe 2002, p. 447). This uncertainty also affects demands placed on the worker, the degree to which he or she is involved in the workplace decision-making process, and overall an increase in the worker's exposure to stressful conditions (Fenwick and Tausig 1994).

THE CANADIAN CONTEXT

In a recent study of executives in the Canadian Public Services, the Conference Board of Canada found that lack of job control increases the likelihood that individuals will suffer from distress (Bachman 2000, p. 6). The following highlights some of the disturbing results of the study:

> High distress ... was shown to increase the likelihood of experiencing musculosekeletal problems by 90 per cent; cardiovascular problems by 120 per cent; gastrointestinal problems by 210 per cent; coronary heart disease by 350 per cent; and *mental health disorders by 1,740 per cent* (my emphasis)(ibid).

The Conference Board's report suggests it is necessary to employ a more comprehensive approach than has been traditionally used to understand the psychological demands of work and the linkages to physical and psychological outcomes. With respect to work stress, they cite a number of psychosocial risk factors in the work environment that include job control, workload, skill utilization/underutilization, social support from supervisors and colleagues, work schedules, role ambiguity, responsibility for others, role conflict, interpersonal conflict, job future ambiguity and organizational culture. But it is argued, the model of workplace health could be further enhanced by acknowledging the impact of job distress at the community level in terms of social costs, health costs, economic prosperity and the environment (ibid. p. 7). This dissertation addresses these issues by developing a more comprehensive model of the stress process that focuses on work.

Stress at work does not occur in a vacuum. Work-related stress has antecedents, such as the impacts of globalization at a macro level and, as I will argue later in this Chapter, at the individual or micro level, in terms of the psychological resources we bring with us into the workplace. Work stress also has consequences such as the mental health outcomes I have already mentioned and will elaborate later in this dissertation. Furthermore, stress at work occurs within the broader family and community context of individual's lives.

THE SOCIAL CONTEXT OF WORK STRESS

Work-Family Interference

In order to develop a more comprehensive model of work stress, it is necessary to go beyond the boundaries of the workplace to explore, for instance, the interface between work and home life. Most of us have experienced stress from work affecting us at home, and vice-versa. In 2001, Duxbury and Higgins (2003) systematically investigated the issues surrounding work-life balance. For them, the problem of work-life conflict is how to make it easier for Canadians to "balance their work roles and their desire to have a meaningful life outside of work" (p. 1). Work-life conflict is conceptualized to include "role overload, work to family interference, family to work interference, … and caregiver strain" (ibid, p. 1). These concepts are further defined in

Chapters 3 and 4 and in the Glossary.

Duxbury and Higgins' most recent national study of Canadian workers in various types of work organizations (2002), showed significant increases in work-family conflict compared to a similar study they had completed in 1991. The 2001 study found greater numbers of respondents experiencing high role overload, work to family interference, family to work interference, caregiver strain, and, especially for employees working in large organizations, an increase in work spilling over to family life (Duxbury and Higgins, 2003, pp 2-4).

Duxbury and Higgins (2003) go on to argue that, because of this work-family conflict, only half of the surveyed employees were highly committed to their employer or satisfied with their job. One-third experienced high job stress and 25% thought often about leaving their organization. Employees were taking more time off work due to mental health concerns, ill health, or emotional, physical or mental fatigue, an increase of 28% between 1991 and 2001 (ibid, pp 5-6). Extrapolating from their study, the authors estimated that the direct costs of absenteeism due to work-life conflict were approximately \$3 to \$5 billion in Canada in 2001. When direct and indirect costs were combined, work-life conflict cost about \$4.5 to \$10 billion a year (ibid, p. 8).

Work-life conflict has negative impacts on family functioning. It affects how people feel about their parenting responsibilities, and also diminishes family functioning, family life satisfaction and positive parenting behaviours (ibid, p. 9). Duxbury and Higgins also conclude that, at the personal level, work-family conflict increases feelings of perceived stress, burnout, depressed mood, and poor physical health (ibid, pp 9-10).

Work Stress as a Process

As noted above, work stress research has expanded to include both the psychosocial work environment and work-life balance as explanations of employee health outcomes. Given what we now know about workplace stress and work-family interference, a natural next question might be why some workers are able to cope with such stressors while others cannot? To answer this question, one has to look at stress as part of an overall process within which work plays a central role.

Several decades ago, Pearlin et al. (1981) developed a useful model of the stress process that I build on in this dissertation. Pearlin et al.'s comprehensive model conceptualizes stress as a process consisting of the sources of stress, the mediators or moderators of stress and the outcomes of stress. Pearlin (1989) emphasizes the importance of looking beyond the boundaries of immediate stress to the social structural conditions of life, which also may be a source of stress and thus may influence mental health.

Personal Resources as Moderators of Stress

There is a great deal of research outlining the sources of workplace stress and work-family conflict (Chapter 3). But, aside from research that talks about social support and, to some extent, coping in the workplace, there is little research in the work stress literature regarding other factors that might mitigate the relationship between stress in the workplace and mental health. However, there is a long tradition of studying the importance of personal resources, such as self-esteem and mastery, in reducing levels of depression. Examining the role of personal resources in mitigating workplace stress will enable me to answer the question of why some people cope with work and non-work stressors while others do not. Specifically, I propose that individual differences in levels of self-esteem and mastery will help explain variations in depression when controlling for non-work and work stressors, and should consequently be incorporated into models of the stress process that focuses on work.

My unique approach looks at personal resources in two specific ways. First, I suggest that current personal resources will have an independent, direct effect on depression. Second, and more importantly, I examine the moderating or interaction effects of personal resources in the relationship between stressors and depression. In other words, I propose that personal resources can reduce the effects of stressors on depression. To clearly understand the direct and moderating effects of personal resources on depression, it is important to look also at "early" personal resources since personal resources in adulthood may be affected by depression (i.e., they may be an outcome rather than a cause). In Chapter 2, I argue that personal resources at the age of 18 are shaped by early childhood development and experiences. By this age, these perceptions of the self are well established and relatively stable. Thus, they can be used to predict current levels of depression. I propose, therefore, that self-esteem and mastery at the age of 18 will have an independent, direct effect on depression in addition to a moderating effect on other stressors. To measure self-esteem and mastery at the age of 18, I used "recall" measures of personal resources that asked respondents to think back to when they were 18 years of age. There are, of course, methodological issues associated with this approach. These are discussed in Chapter 4.

Depression as the Outcome Variable

As I have already noted, this research examines the impact of work and non-work stressors, as well as personal resources, on depression. Other outcome measures were considered. However, depression[1] is one of the most widely used outcome measure in the work stress literature and can also be linked to stressors outside of the workplace. Although I discuss alternative outcome measures in detail in Chapter 4, a few comments about their limitations would be useful here.

"Perceived stress" is a relatively common outcome measure in studies of work stress. Perceptions of stress rely on measures of daily hassles and irritants (Cohen et al. 1983) that could, if they persist, have long-term effects. But it is the more enduring stresses and strains that are basic to this analysis. Furthermore, my analysis (Chapter 5) revealed that perceived stress was highly correlated with depression and mastery. In addition, measures of perceived stress tap into the concept of individual control or mastery, which is a central theme of this research. Given the importance of mastery in this analysis, the use of depression was preferable over perceived stress as an outcome variable.

Measures of burnout are also used quite widely in the work stress literature. However, as I have already argued, my model expands on current work stress approaches to include work-family interference and other non-work stressors that are not relevant to work-related outcome measures. As a result, a more general outcome measure like depression is more appropriate to my study.

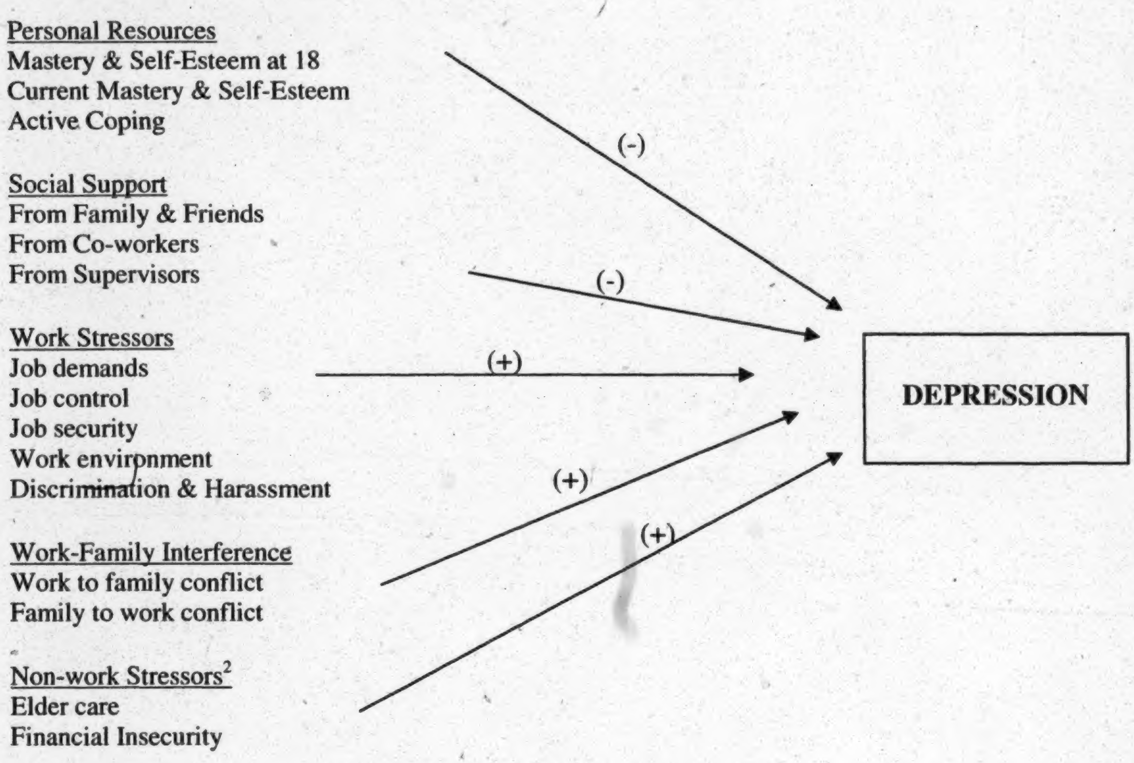
---

[1] The term depression, as used in this dissertation, does not refer to clinical depression, which can only be determined by mental health professionals. Rather it is a term that relates to depressed mood and certain physiological symptoms. However, the use of the term "depression" is conventionally used in the social science literature to describe non-clinical depression, and I follow this practice.

Generally speaking, the model proposed in this dissertation predicts that psychosocial work hazards (e.g., job demands and lack of job control), work-family conflict stressors, such as work interfering with family life, and non-work related stressors (e.g., financial strain and eldercare responsibilities) will increase levels of depression. Furthermore, mitigating variables such as social support from family and friends are hypothesized to diminish the effects of stressors on depression. Finally, the model posits that individuals high in personal resources (i.e., self-esteem, mastery) will be protected from the negative effects of stressors.

My analysis is conducted in two stages. First, I conduct a series of multiple regression analyses to examine the additive effects of personal resources along with the stressors outlined above on depression (Chapter 5). Second, I explore the moderating role of personal resources on the relationship between stressors and depression (Chapter 6). Figure 1.1 illustrates the core concepts of my model. The establishment of the theoretical links amongst these variables is described in Chapters 2 and 3. The measurement of each of these concepts is discussed in more detail in Chapter 4.

Figure 1.1 List of Core Concepts


Personal Resources
Mastery & Self-Esteem at 18
Current Mastery & Self-Esteem
Active Coping
Social Support
From Family & Friends
From Co-workers
From Supervisors
Work Stressors
Job demands
Job control
Job security
Work environment
Discrimination & Harassment
Work-Family Interference
Work to family conflict
Family to work conflict
Non-work Stressors[2]
Elder care
Financial Insecurity
(-)
(-)
(+)
(+)
(+)
DEPRESSION

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[2] My initial intention was to include measures relating to having children. However, preliminary results revealed my two measures of parenthood were unreliable. I asked first whether respondents had children under 18 living at home and later I asked them to break down the number of children living at home by age groups. Even so, I did include having children in my preliminary multiple regressions but the analysis did not reveal this variable to have any significant effect on depression

CONTENTS OF THE DISSERTATION

Chapters 2 and 3 review the relevant research literature. Chapter 2 conceptualizes the relationship between stress and health. It also describes Pearlin et al's (1981) model of the stress process that includes stressors and stress moderators. A discussion of how coping, social support, and personal resources mitigate the effects of stress on depressive symptoms then follows. This Chapter also explores theories of early childhood development and how they relate to an individual's early and current sense of self-esteem and mastery.

Chapter 3 briefly outlines the evolution of work stress research and argues that Karasek et al.'s (1986) job demand–control–support model is the most appropriate approach for understanding the work stress component of the stress process model. Additional work-family concepts and other work and non-work related stressors are discussed in terms of their contribution to the model.

Chapter 4 describes my research methods. I explain how the survey instrument was created, the study sample was identified, and the data collected. A detailed description of the characteristics of study participants (561 employees of a major municipal government department in a Western Canadian city) is presented. I also describe the variables used in the analysis as well as how indices were constructed.

Chapters 5 and 6 contain results of my data analyses and a discussion of these results. In Chapter 5, I report a series of multiple regression analyses that lead to the identification of my central model. Chapter 6 takes the significant stressor components of the central model and examines how levels of self-esteem and mastery at the age of 18 moderate the impact of these stressors on depression.

My conclusions are outlined in Chapter 7 as are the contributions my research has made to the literature, the limitations of my study, and implications for future research and organizational policy.

A “Glossary” of terms used throughout this dissertation can be found in Appendix 1.1. Other appendices include: Appendix 4.1 – The Questionnaire, Appendix 4.2 – Scale Development, and Appendix 5.1 – Correlation Matrix of all variables used in the analyses.

CHAPTER TWO – OVERVIEW OF THE STRESS PROCESS

INTRODUCTION

In this Chapter I provide an overview of the stress process by briefly explaining bio-physiological stress responses (as first described by Hans Selye 1982) and then highlighting the importance of attaching psychological meaning to stress responses. The discussion then locates the stress response in its wider social context by introducing a general model of stress developed by Pearlin et al. (1981). This model proposes that stress is a process that results from prior social influences over the life course in addition to current experiences and situations in an individual's life. This Chapter also discusses the immediate sources of stress and the mitigators and moderators of stress with respect to psychological well-being. A more comprehensive discussion of particular psychological outcomes will be provided in Chapter 3.

THE STRESS RESPONSE

According to Hans Selye (1982), the "father" of stress research, central to our understanding of stress is the recognition that similar situations are capable of producing a stress response that can either be negative or positive (as cited in Cordon, 1997). Cordon (1997) states that, according to Selye, when one is subjected to prolonged stress, one goes through a set of three phases: alarm reaction; stage of resistance; and exhaustion.

The alarm reaction is more generally known as the "flight or fight" response. This response generates a set of neurological and physiological reactions that provide the body with instant energy. If the situation is not resolved, the body remains in a continued state of arousal, the stage of resistance. In this stage the increased levels of hormones produced may upset the body's homeostasis and can harm internal organs and leave the body vulnerable to disease. If the stage of resistance is further prolonged or intensified, one reaches the stage of exhaustion where the body's energy reserves are exhausted and breakdown occurs. "Diseases of adaptation" are more likely to occur at this stage and include high blood pressure, cardiovascular and kidney disease (Selye 1985).

Lazarus and Folkman's (1984) transaction theory of stress helps to explain the interaction of the individual with his or her environment (Lazarus and Folkman 1984, as cited in Cordon 1997). Lazarus and Folkman's theory emphasizes that it is the meaning the individual attributes to a particular event, rather than their physiological response to it, that explains whether the event is stressful or not. In other words, an event has to be perceived as either threatening or challenging (primary appraisal) in order for the individual to find meaning in it. However the event is perceived, the individual has to evaluate whether he or she has the resources or the ability to cope with the demands of the situation (secondary appraisal). The event is appraised as a stressor if it is personally relevant to the individual and one's ability or resources to cope do not match the demands of the situation (Cordon, 1997).

Cordon (1997) notes that current stress research has become aware of the importance of the social and cultural aspects of stress and coping. This awareness has been brought into focus as studies reveal that individuals who experience similar difficulties do not necessarily react in the same manner. Pearlin (1982) argues that the coping strategies that people use are largely defined by the social conditions of life.

Therefore, according to Cordon (1997) it is necessary, when studying the epidemiology of diseases associated with stress, to study the cultural and social conditions in which people find themselves. Further, she states that it is necessary to re-examine and re-define the stress process in terms of social and cultural differences, and then offers a re-definition of stress as:

> … a set of neurological and physiological reactions that serve an adaptive function in the environmental, social, and cultural values and structures within which the individual acts upon (p. 5).

For the purposes of this research, it would be useful to connect the previous definitions of stress to a more generalized working definition. Semmer (1997, p. 2) suggests that stress is " a state of tension that is experienced as aversive" and "involves negative emotional states such as anxiety, frustration, anger, and guilt." Further, Semmer points out that this definition implies that "stress has to do with the – anticipated or experienced – thwarting of goals" that comes from the individual's unique personality . Having expanded the definition of stress to include a state of tension that implies the thwarting of goals, it is time to turn to a discussion on how stress can be examined in the social context.

PEARLIN ET AL.'S (1981) GENERAL MODEL OF STRESS

I chose Pearlin et al.'s (1981) model of the stress process because his model is widely used in the sociological literature; if I wish to add to this literature, I need to maintain the same general methods and models. Furthermore, my present research builds on my previous research[3] which also used Pearlin et al.'s (1981) stress model. Pearlin et al.'s (1981) seminal article on the stress process provides stress researchers with a useful social framework that goes beyond the biological and physiological understanding of stress.. Their theoretical concept of stress as a process allows us to explore the social-structural conditions that can precipitate a negative stress response. For Pearlin et al. (1981) there are three major conceptual domains within the stress process: the sources, mediators, and manifestations of stress.

Before Pearlin et al.'s (1981) study changed the research landscape, the various components of stress, such as life events, chronic strains, coping, and social support were often examined separately with respect to their impact on physical or psychological health, for example. While it was once thought that the mere accumulation of life events would lead to distress, it became clear to Pearlin et al. (1981) that life events do not necessarily have a direct impact on an individual, but rather operate through the wider context of life (or chronic) strains. In their words, "life events may create new strains or intensify preexisting strains [resulting in] intensified [and persistent] strains … that can eventuate in stress" (Pearlin et al., 1981, p 339).

Pearlin at al. (1981) also advanced the notion that experiencing persistent strains could erode one's sense of self-esteem and mastery because the presence of these strains (and presumably one's inability to resolve them) would bring into focus one's sense of inadequacy and inefficacy in dealing with problems. But they also suggested that one's sense of self-esteem and control might in and of itself be the "initiating force in the stress process" (p. 351).

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[3] My Master's Thesis used Pearlin et al.'s (1981) stress model to explore the relationship between stress and depression within five Indian communities in Alberta.

Pearlin et al's study (1981) showed that personal resources such as self-esteem and mastery, and coping, as well as social support buffered the effects of chronic strain under certain conditions. With respect to coping, they found that individuals who had lost their jobs but were able to cope with the economic changes in their lives were less likely to report depressive symptoms than individuals who had difficulty coping. On the other hand, they discovered that social support functioned by minimizing the loss of positive self-concepts.

Pearlin (1989) later stated that it was the interrelated nature of the social context of people's lives (i.e., social stratification, social institutions, and interpersonal relationships) that influence and shape one's life experiences, and one's perception of and ability to cope with stressors. He also cautioned that if one only looks at the stressors immediately related to an individual's experience, one runs the risk of not identifying the patterns or regularities that people of similar social characteristics and circumstances may share. Therefore, looking at the structural factors beyond the immediate stressors could enhance our understanding of the causal determinants of stress.

More recent research in the sociology of stress has examined many components of the stress process. For example, researchers have investigated the causal effect of: family structure and employment on women's distress (Avison 1995); caregiver role strain on depression (Williams 2003); negative life events on depressive symptomatology in the elderly (Kraaij and De Wilde 2001); personal resources, anxiety, and self-image on depression (Bradshaw and Gilbrech 2001); social support on satisfaction in marriage, perceived stress and depression (Dehle et al. 2001); the relationship between perceived stress and coping resources on life satisfaction (Hamarat et al. 2001); and stressful life events and parenting on the psychological well-being of African-American mothers (Taylor et al. 1997).

However, an examination of the stress research literature reveals a paucity of studies that have taken up Pearlin's (1989) challenge to explore the relationship between vulnerability to stress and prior developmental experiences. While this dissertation does not directly examine the role of developmental experiences, it does focus on the outcomes of such experiences (i.e., different levels of personal resources) and on how they influence the relationship between stress and well-being.

Building on Pearlin's work, Turner et al. (1995) and later Turner and Avison (2003) identified two main themes that emerged from stress research. First, Turner et al. (1995, p. 104) argued that the prevailing view in the sociological literature that "differences in vulnerability [as measured by SES] to stress account for social status variations in mental health" was not sufficient to explain these variations. What they found more compelling was that differences in the amount and quality of exposure (my emphasis) to stress across sex, age, marital status and occupational status explained more of the variance in mental health than social status alone. In other words, differences in social status were not sufficient, in and of themselves, to explain observed differences in depression. Second, Turner et al. (1995, p. 115) argued that, "... variations in exposure to social stress substantially arise out of developmental and contemporary conditions of life." Therefore, to understand the epidemiology of social stress, researchers need to look at the "ongoing conditions of social life and in accumulated traumatic life experiences" (ibid, p. 119).

SOURCES OF STRESS

As already noted, most stress research has focused on the immediate sources of stress. Heeding Pearlin et al's (1981) advice to look at the social origins of stress and Turner et al's (1995) and Turner and Avison's (2003) conclusion that some of the sources of stress are located in the developmental aspects of individual lives, it is important for our understanding of the stress process to discuss the role that developmental conditions might play in one's vulnerability to stress.

Theories of Developmental Psychology

One of the important theoretical contributions of my research is its recognition that childhood development plays an important role in the formulation of early personal resources, namely self-esteem and mastery, the lack of which may make an individual more vulnerable to stress. I begin by discussing theories of developmental psychology that link childhood experiences to adult attitudes and behaviour.

The personality development literature can be described within three broad traditions: behaviourism, psychoanalytical theory, and Adlerian social learning theory. From the perspective of my project, I found that behaviourism and psychoanalytical theory were less useful than Adlerian theory. I am interested in the interaction of the individual with his or her social environment from an early age and how these interactions affect his or her ability to cope with stressors later in life. For this reason, behaviourism, which is more likely to evoke evolution, genetics and biological instincts is not as appropriate a theory for my dissertation. Similarly, psychoanalytical theory does not appear to be as relevant because of its strong emphasis on the sex drive as a motivating force. Additionally, psychoanalytical theory does not directly address important concepts of the self, such as mastery or self-esteem, nor one's ability to cope with the stressors in life, concepts that are a major concern in my thesis.

Adlerian Theory

The psychological approach I take in this paper is based on social learning theory. This perspective sees the development of the individual as a product of historical, social and cultural influences. Of central importance is the individual's interaction with his or her family and peers and other social experiences. Alfred Adler is arguably one of the most important contributors to contemporary social learning theories of personality development (Stein and Edwards, 1998). According to Kern et al (1996), Adler's comprehensive and systematic framework allows us to investigate the interplay between personality characteristics and stress coping resources – unlike many models that do not account for personality factors. I rely on the work of Stein and Edwards (1998), whose interpretations of Adler's work dominate the research literature, as the main source for my discussion of Adler's theory of personality development. Adler (1932) describes the motivating force of life:

> All our strivings are directed towards a position in which a feeling of security has been achieved, a feeling that all the difficulties of life have been overcome and that we have emerged finally, in relation to the whole situation around us, safe and victorious (p. 2).

Adler's concept of "style of life" asserts that there is one central theme for most individuals. The particular "style of life" is a product of an individual's connections with family and society. In other words, Adler sees and understands individuals in terms of their social context. An individual's development is "unique, creative, and dependent on the subjective interpretations the person gives to life" (Stein and Edwards, 1998, p. 2). Moreover, the developing individual "behaves as a unit" moving in the same direction. Therefore, to understand someone, "we must look at the whole person, not at the parts, isolated from one another" (ibid, p. 2).

Adler argues that personality development is the result of a creative process where individuals attach meaning to their lives based on their experiences. Thus they are actively involved in constructing and interpreting situations in which they find themselves. The process begins in infancy where the child may become conscious of "felt insufficiencies" especially when they compare themselves to older children and adults (Adler refers to this as a "minus situation"). Feelings of inferiority motivate the child to strive toward a "plus situation." Ultimately, this pursuit motivates the individual to work towards his or her "final goal." For Stein and Edwards (1998, p. 3):

> The final goal is a fictional creation of the individual – an imagined ideal situation of perfection, completion, or overcoming. Movement toward the final goal is motivated by striving to overcome the feelings of inferiority. Although the final goal represents a subjective, fictional view of the future, it is what guides the person in the present.

According to Stein and Edwards (1998, p. 3), Adler believed that the first five years of a child's life are central to the development of personality. In pursuit of the final goal (perfection, completion or overcoming), family and external social influences are critical, but connections with and influences of the mother[4] are primary. With proper encouragement, a child learns to cope with and overcome difficulties. However, without proper encouragement, feelings of inferiority are exaggerated and a child is likely to feel discouraged. By the age of five, a child has developed a sense of his or her goal and style of life which influences the way they conceive of the self and the world around them. They develop a "set of lenses" in which there will always be a discrepancy between reality and perception. Normally, the discrepancy is small, but for individuals who are psychologically disturbed the discrepancy is much greater.

Adler's understands psychopathology to consist of exaggerated feelings of inferiority and an underdeveloped sense of community. People with such feelings may experience or anticipate failure in the performance of tasks that appear to be impossible and will then resort to "fictional" means to mask their sense of inferiority. Expressions of anxiety and depression can "shield" the individual from potential or actual failure in performing the tasks of life. It is important to realize that these reactions are largely unconscious and that the person who engages in them usually suffers great distress (Stein and Edwards 1998, p. 4).

In summary, Adler's theory states that early experiences, which are shaped by heredity, physiological characteristics, and family and community social conditions, affect the development of an individual's perception of the self. These perceptions form the basic lens through which the world is interpreted. In situations where the individual perceives that he or she is inferior, they are most likely to engage in behaviours or suffer symptoms that relieve them of this sense of inferiority but, ironically, increase their suffering. In other words, people with a sense of inferiority engage in maladaptive behaviours, such as blaming or bullying, that on the face of it may relieve their sense of inferiority, but only end up increasing their perception of stress. People who feel inferior tend to see stressors as a threat to the self that cannot be overcome in a constructive way.

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[4] If Adler had been writing today, he would most likely acknowledge the role that fathers' play in their children's upbringing.

Even though Adler was writing in the first half of the twentieth century, his ideas still resonate with contemporary psychology because they help us understand individual human beings and their relationship to the social world (Stein and Edwards, 1998). Adler's work has been criticized by some as unscientific because his concepts are difficult to measure, but others see it as highly influential because of its ability to describe and interpret problems (Boeree 1997). Boeree (1997) finds that Adler's concepts are useful constructs that can be scientifically investigated. Kern et al. (1996, p. 43) support this view and claim that, "Adler provides a holistic and systemic framework from which to investigate the interplay between personality and stress coping resources." In short, Stein and Edwards (1998, p. 1) state that Adler's theory of personality development is "an exquisitely integrated, holistic theory of human nature and psychopathology."

Attachment Theory

Attachment theory, which builds on Adler's work, attempts to explain the interface between psychological characteristics and the environment, especially relationships with significant others, to predict individual adjustment over the life course (Willoe 1997). Attachment theory is based on the work of John Bowlby who hypothesized that children who were raised in institutions from infancy were unable to form loving relationships because they had not developed a solid attachment with their mothers (D'elia 2001). Bowlby believed that a securely attached child would develop an "internal working model" from which he or she would develop an "attachment behaviour system" where expectations of the self and the interrelationships with significant others are represented and form the basis of future expectations (D'elia 2001; Egeland and Erickson 1999). Simply stated:

> A securely attached child will store in his memory an internal working model of responsive, loving, and reliable caregivers and a self-representation that is worthy of attention and love. He will bring these assumptions into other relationships (D'elia, 2001, p. 331).

The insecurely attached infant, on the other hand, after a history of "insensitive, inconsistent, or unresponsive care" will suffer from anxious attachment and will not expect or seek comfort or protection from caregivers during times of distress (Egeland and Erickson 1999, p. 4). Although Bowlby held that attachment behaviour would follow the child from the "cradle to the grave" it is also recognized that the internal working model is "subjected to constant revision and change" based on relationships and experiences over the life course (D'elia 2001; Fraley et al. 2000).

While Bowlby's theory suggests that insecure attachment styles may lead to future cycles of insecure attachment, Egeland and Erickson (1999) found that the cycle could be broken. Although first-time mothers with a history of abuse and neglect were more likely to continue the cycle of maltreatment with their children, some were able to break the cycle. Apart from mothers who had received therapeutic interventions, the authors found that mothers who had access to emotionally supportive individuals, or were in a stable and satisfying relationship with supportive mates, were more likely to provide quality care for their infants. However, Egeland and Erickson (1999, p. 5) also found that high-risk mothers were more likely to have problems in the child-parent relationship if they experienced other factors such as, "economic stress, chaotic home environments, family conflict and a lack of social support."

Thus far, I have argued that Adlerian and attachment theories provide useful frameworks from which we can understand the importance of positive early childhood experiences in the development of individual concepts of self. Attachment research has demonstrated that early relationships have lasting effects and can influence adult attachment experiences and other social relationships (Antonucci et al. 2004; Fraley et al. 2000), emotional dispositions and styles of emotion regulation (Magai et al. 2004), and coping style, depressive symptoms and perceived well-being (Zhang and Labouvie-Vief 2004). Research has also shown that parental attachment patterns predict variation in adult experiences, social support, marital relationships, psychopathology and personality (Fonagy 1997) and that attachment history is related to the growth of self-reliance, capacity for emotional regulation, and the development of social competence (Sroufe 2005).

While attachment theory research has demonstrated a link between early childhood development and adult behaviour, much of this research is concerned with adult attachment relationships and psychopathology. In other words, attachment theory is interested in childhood attachments to parents and primary caregivers and how these relationships translate into adult attachments to children, spouses and friends. However, there have also been some studies that examine the relationship between attachment and self-esteem. For example, Parental Acceptance and Rejection Theory (PAR Theory) offers some additional insights into the mechanisms through which adult concepts of the self are connected to early childhood development.

PAR Theory

Perry (2000) asserts that parental neglect is crucial to understanding personality development because it prevents the healthy organization of experiences during key times of development (Perry 2000). He writes that: "Childhood maltreatment has [a] profound impact on the emotional, behavioral, cognitive, social and physical functioning of children" and ultimately their functioning as adults in society (p. 1).

Parental neglect has been largely understudied because it is a very difficult phenomenon to study (Fraley et al. 2000; Perry 2000). However, some recent research has shown that childhood emotional abuse (or neglect) is a stronger predictor of adulthood depression than childhood physical abuse. Moreover, parental neglect has also been associated with other mood disorders, low self-esteem, and suicide intentions (Fraley et al. 2000).

Problems of psychosocial development tend to result in accumulated problems of social functioning over time. Ronka et al.'s (2000) longitudinal study demonstrated that certain risk factors in childhood (i.e., low control of emotions, school problems) predisposed men and women to a sense of failure in adulthood. This sense of failure contributed to an inability to cope with challenging life situations and increased feelings of negative self-esteem and helplessness later in life, particularly for women. The authors concluded that risk factors "are transmitted into adulthood both through environmental continuities … and psychological vulnerability" and that these "lines of transmission" were cyclical in nature where the "outcomes of earlier problems [become the] antecedent of later problems" (Ronka et al. 2000, p. 448).

Similar results have been found in other studies. Rosen and Martin (1998), for example, found that childhood maltreatment resulted in enduring negative personality characteristics that affect adult adjustment, especially in terms of occupational and social functioning, whereas the absence of emotional neglect was associated with positive personality characteristics (Rosen and Martin 1998). Rohner (2000) suggests that parental acceptance and rejection may have a greater influence on children than any other experience. Rohner defines parental neglect as parents who are indifferent, unconcerned or uncaring about their children or who act towards them in a hostile or aggressive manner. Neglect, he continues, is not "simply a matter of failing to provide for the material and physical needs of children" (p. 2). It is also failing to respond to a child's social and emotional needs. As a result, neglected children are likely to feel rejected and unloved. Empirical evidence suggests that neglected children are likely as adults to have low self-esteem, a low sense of mastery, emotional instability, and to have difficulty coping with stress and an increased likelihood to suffer from depression (Rohner 2000; Sheerer 1997; Steele 1986).

In summary, this dissertation is concerned with establishing a link between individual characteristics that develop as a result of childhood experiences that may or may not leave the adult vulnerable to stress. I have argued, using various theories of developmental psychology, that vulnerability to stress can be traced back to early childhood relationships with primary caregivers. This is not to say that other significant relationships over the life course do not have a role to play. In fact, it is clear that the individual is constantly re-evaluating him or herself in the context of continuing social relationships. But it is the "style of life" as proposed by Adler or the "internal working model" put forward by Bowlby that is established in early life that provides the lens through which we see and interpret the world around us.

In short, researchers have long been aware of the relationship amongst parenting, recollection of childhood events, attachment style and adult psychological functioning. It has been shown that adverse childhood events (including parenting style) do have consequences for adult mental health in a number of ways. Thus research into early childhood development has demonstrated the importance of Pearlin's (1989) profound thinking that it is the interrelated nature of the social context of people's lives that shape one's life experiences. It also shows that we must look beyond the immediate sources of stress to the social-structural conditions of a person's life to identify the patterns or regularities that people of similar social characteristics and circumstances may share.

IMMEDIATE SOURCES OF STRESS

Life Events and Chronic Strains

Having discussed the relevance and importance of childhood developmental experiences to adult concepts of the self, I now shift my discussion of the sources of stress towards more immediate sources of stress, in both the work and non-work spheres.

Specifically, I argue that it is the more enduring strains, rather than specific life events per se, that seem to have the greatest impact on psychological well-being. Turner and Avison (1992) note that stressful life events and physical and psychological disorders have some explanatory power for depression, but that only a minority of persons suffer significant emotional distress as a result of such stressors. They propose that crisis theory, conceptualized as "normal personality growth [occurring] through the resolution of normative developmental crises," (p. 37) might provide another explanation to the role negative life events play in relation to negative outcomes. They argue (p. 38) that stress research assumes "that events or circumstances involving adverse change … [has] profound implications for health [and well-being]." However, Turner and Avison (1992, p. 38) also comment that crisis theory suggests that life events may provide individuals with "opportunities as well as hazards." Furthermore, the resolution of a negative life event may depend on a history of successfully resolving previous similar events. But their findings reveal that previously resolved events did not appear to be significant for the resolution of current events. What they did find was that, for people with high SES and high levels of mastery, resolution of events was of no consequence. However, for individuals who had low SES and levels of mastery, previous resolution was "profoundly significant" (Turner and Avison 1992).

Taylor et al. (1997) studied the relationship between life events and psychological well-being in African American mothers. Their study revealed that stress from work and family disruption (e.g., family arguments or a death in the family) had significant negative effects on mothers' sense of self-esteem, whereas health problems had a significant positive effect on psychological distress. In another study of African American women, it was determined that role strain was most salient for caregivers who had depressive symptoms when the elderly they cared for had poor physical health (Wallace Williams et al. 2003). Ironically, caregivers with higher levels of education were more strained than those with lower levels of education, indicating that the costs of caregiving are higher for those who have higher education. The authors do not provide a satisfactory explanation for this unexpected finding except to say that resources, such as education, are "differentially related to stress levels, opportunities, and access to health care and services options" (p. 109). In her study of married and employed Chinese adults, Lai (1995) found that, for women, both work and family conflicts were significantly associated with psychological distress. However, men tended to be more vulnerable to psychological distress when they experienced work conflict. The findings suggest that women experience more role conflict than men.

Finally, it has been shown that the accumulation of negative life events over the life course predicts depression in the elderly (Kraaij and De Wilde 2001). Specifically, depression in the elderly was predicted by poor socio-economic circumstances, emotional abuse and neglect in childhood, poor socio-economic circumstances, spousal emotional abuse and neglect, relational stress, and problem behaviours with significant others. An increase in the number of negative life events was associated with a higher score on depression. However, it is arguable that some of the circumstances Kraaij and DeWilde refer to as negative life events, such as poor socio-economic circumstances, are likely more enduring chronic strains. In summary, I argue that the mere presence of a negative life event is not sufficient to explain psychological outcomes. Rather, it is the non-resolution of an accumulation of strains or the persistence of chronic strains that erode one's psychological well-being.

MEDIATORS AND MODERATORS OF STRESS

Pearlin et al (1981) introduced the idea that coping and social support could mediate[5] or moderate[6] the stress process. Additionally, they argued that the strains people experienced could erode concepts of the self, namely, self-esteem and mastery. However, each of these mediators could intervene at any point in the process. I am proposing that the development of self-concepts is ultimately bound up over time with the development of an individual's personality and, therefore, can be traced back to childhood and adolescence. Similarly, coping and social support, I argue, are inextricably linked to concepts of the self and these two concepts are linked with an individual's experience over the life course. That is, early attachment provides a child with the information he or she needs to develop a concept of the self, an understanding of how to resolve adverse events, and an identification of the people he or she can rely on when protection is needed and later, a sense of belonging.

Coping

Pearlin et al (1981) describe coping as behaviour that is learned from and shared with people in their "membership groups." Furthermore, coping has three functions: "the modification of the situations giving rise to stressful problems; the modification of the meaning of problems ... that reduces their threat; and the management of stress symptoms" (p. 341). Most important, the authors state that coping behaviours are specific behaviours that vary with the nature of a particular problem and within the "social roles in which the problems emerge" (p. 341). Their description of coping is in line with Folkman and Lazarus's (1988) views. Folkman and Lazarus argue that how an individual copes with stress affects their psychological and physiological well-being and social functioning . The authors define coping as "the cognitive and behavioral efforts to manage specific external and/or internal demands appraised as taxing or exceeding the resources of the individual (ibid p. 2). Specifically:

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[5] A mediating variable is an intervening variable that helps to explain why an antecedent variable affects a consequent variable, resulting in two linked propositions (Smith, 2003)

[6] A moderating variable (interaction variable) accounts for situations where the relationship between an antecedent variable and a consequent variable is dependent on a third variable. This is also known as a buffering effect (ibid.)

> Coping, when considered as a process, is characterized by dynamics and changes that are a function of continuous appraisals and reappraisals of the shifting person-environment relationship....Shifts may result from coping efforts that are directed outward toward changing the environment, or efforts that are directed inward toward changing the meaning of the event. Shifts may also result from environmental changes independent of the individual. Any shift in the person-environment relationship leads to a reappraisal of what is happening, its significance, and what can be done. This reappraisal then influences subsequent coping efforts."

On the face of it, certain coping behaviours could be viewed as adaptive (resolving the problem) or maladaptive (inability to resolve the problem). For example, one would assume that problem-focused coping (e.g., being actively engaged in solving a problem) is adaptive, whereas avoidance coping (e.g., turning to drugs or alcohol) is suggestive of a maladaptive response. But coping responses are much more complicated. Folkman and Lazarus (1988) argue that any particular coping strategy must be viewed in light of the "adaptational outcomes in specific contexts" (p. 3). For example, the authors cite a study by Forsythe and Compas (1987) that found the use of problem-focused coping in situations that were seen as controllable was more successful at resolving issues than the use of emotion-focused (such as expressing one's emotion) coping. On the other hand, emotion-focused coping was found to be more successful than problem-focused coping when situations were evaluated as uncontrollable (pp 20-21).

Gale's (1994) study of the ability of older women to function independently, found that problem-focused coping had a significant positive effect on physical and psychosocial health. Sigmon et al. (1995) found that, generally, women reported using more emotion-focused coping strategies than males, as women rated emotion-focused coping as more effective. However, of the emotion-focused strategies, women were more likely to engage in support-seeking and emotional expression rather than avoidance or acceptance of the situation. But, when males and females occupied similar roles, they found that women used more problem-focus strategies than men. Finally, the authors found that avoidance coping was associated with higher levels of psychological distress but lower levels of psychological well-being. Similarly, Rick and Guppy (1994) reported that white-collar workers who used problem-focused coping strategies were much more likely to have positive mental health scores than workers who tended to engage in avoidant behaviours. Indeed, the authors found that avoidant and problem-focused coping behaviours were the most significant predictors of mental health in their study (Rick and Guppy 1994).

In summary, problem-solving or active coping strategies appear to be related to better psychological health. Avoidant strategies tend to have a negative effect on psychological well-being, although it depends on the situation. Avoidant coping strategies could be adaptive when, perhaps, one's self-esteem is threatened. Obviously, the study of coping styles is a complex process. Kern et al.'s (1996) study of 176 American female college students demonstrated that there is a clear relationship between perceptions of early childhood experiences and coping resources, which are inextricably bound up with certain personal predispositions. For example, people who perceived their family environment in a negative way were less likely to use social support from family and friends as a means of coping. Conversely, people who felt their family environment was comfortable and accepting were much more likely to use social support in times of stress. And it would seem that active coping styles are more likely to have a positive function for physical and psychological health than avoidant coping styles (Stowell et al, 2001).

Social Support

Social support, for the purpose of this study, is defined as the perception an individual has that he or she can count on family and friends in times of need. Put another way, an individual feels confident that there are certain people available to provide support whenever they have a problem. For Pearlin et al. (1981, p. 340), "a support system is not necessarily coextensive with a social network." Further, just because one is part of a social network, membership in it does not guarantee that anyone in that network will provide support. Neither does the frequency of contact within a network. The authors state that being embedded in a social network is only the first step toward accessing support. Moreover, they conclude that, "Support comes when people's engagement with one another extends to a level of involvement and concern .... [which] involve[s] the exchange of intimate communications and the presence of solidarity and trust" (p. 341). Their study revealed that social support was uniquely effective in mediating negative effects on self-concepts for those who had lost their jobs and, thereby, reducing depressive symptomatology.

There is also a distinction between social support and social integration (i.e., measuring the extent of one's network). Mitchell and Moos' (1984) longitudinal study of clinically depressed patients showed that buffering effects on stress were evident with perceived social support but not with the number of close friends (Mitchell and Moos 1984). Thoits' (1995) overview of the stress process concluded that social isolation/integration (or structural support) do relate directly to mental and physical health but do not buffer the effects of stressful events or chronic strains. However, perceived emotional support is directly associated with increased levels of mental and physical health and "usually" buffers the impact of stressful events or chronic strains. Finally, Thoits suggests that the "simplest and most powerful measure of social support" is one that taps into the presence of an intimate, confiding relationship with a spouse, lover, friend, and or relative (Thoits 1995, p. 64).

Turner and Marino (1994) examined the relationship between social support and marriage and found that women experienced higher levels of social support than men, although, ironically, women reported higher levels of distress. However, for both men and women, higher levels of support were associated with lower levels of distress. Further, they found that social support was more likely among married respondents than those who were previously married or never married (and not involved in romantic relationships). They conclude that the inclusion of the social distribution of exposure to stress and personal resources may offer some additional insights into the stress-distress process (Turner and Marino 1994).

Dehle et al (2001) demonstrated an association between positively perceived support from spouses and higher marital satisfaction, lower depressive symptomatology and less perceived stress. Similarly, a study of middle-aged women revealed that some of the strongest predictors of depressive symptoms were satisfaction with received support and quality of intimate relationships as opposed to socio-economic factors (Aro, 2001).

Generally speaking, the literature speaks of the benefit of including perceived social support as an important dimension of the stress process. This is especially the case when measuring the emotional component of social support as opposed to one's membership in an extensive social network. A sizable majority of studies that have investigated the effect of perceived support have found evidence that it buffers the impact of stressful events and chronic strains. However, as Pearlin et al. (1981, p. 348) have stated, social support may intervene at various points in the process as either, "main conditions or in interaction with the other conditions that are present."

Personal Resources

Self-Esteem

For Pearlin et al. (1981, p. 340), self-esteem "involves the judgements one makes about one's own self worth." Appraising oneself as competent and having personal worth leads one to believe that he or she is capable, successful and worthy (Locke et al. 1996;

Rosse et al. 1991). Locke et al (1996, p. 1) defines self-esteem as having:

> … two closely-related dimensions: efficacy and worth. By efficacy we mean general efficacy – the ability to deal effectively in principle with life and the world. By worth we mean the conviction that one is morally good.

It has been well established that self-esteem is a global evaluation, and most observers of self-esteem believe it to be relatively stable over the life course (Demo 1992; Morris Center 1995). There are those who suggest, however, that self-esteem can change dramatically over the life course as a result of major transitions such as marriage, parenthood, job loss or promotion (National Advisory Mental Health Council 1996). Demo (1992) argues that recent studies have provided evidence that self-evaluations, such as self-esteem, are characterized by a "baseline" view of the self, which is fairly consistent over long periods of time. However, self-concepts may deviate from the baseline over short periods of time, given certain situations or conditions, but the "basic core structure of self-concept remains fairly stable..." (p.318). Demo suggests that, although individuals experience "multiple role changes, life transitions and turning points" over the life course, the application of "a life-span and life-course perspective to the study of self-concept will enable researchers to examine the social pathways and life trajectories that facilitates a stable self-concept … and experiences that seem to disrupt it" (p. 319). Demo concludes that, "self-concept is a structure but it is also a process. It is stable but it also changes" (p. 323).

Demo's (1992) argument speaks to the necessity of examining self-esteem[7] over the life course, either as an antecedent, mediator, or outcome of the stress process. Belief in one's efficacy and self-worth can lead to the adoption of certain coping strategies that one's believes will be effective and can facilitate access to social support (Smith and Carlson 1997; Thoits 1995).

Self-esteem develops early in life (Demo 1992; Morris Center 1995; Smith and Carlson 1997). According to Masten et al. (1990), parents nurture a child's sense of mastery and self-esteem in addition to physical growth by providing information, learning opportunities, behaviour models, and resources. In the event these resources are lacking, limited, or inconsistent, children will have difficulty adapting to circumstances or their environment, possibly resulting in low self-esteem and an inability to interact with the world around them (Masten et al. 1990). Children learn to describe their own psychological characteristics and begin to evaluate them. Positive awareness can lead to insights that promote healthy change; negative awareness can interfere with normal development (National Advisory Mental Health Council 1996). Specifically, according to Smith and Carlson (1997, p. 243):

> Feelings of self-worth and self-efficacy begin in early life and continue to have protective value through childhood and adolescence....Research suggests that self-esteem is enhanced by many factors, including the development of a "secure base" of positive interactions with adults, including parents, siblings, and other family members, and later, peers and teachers. Self-esteem in children is linked to parental self-esteem, confiding in parents, skill development, having responsibilities to family

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[7] In this dissertation mastery and self-esteem are seen as important components of one's self-concept. Sense of coherence, for example is another component of self-concept, but self-esteem and mastery are most often used in the sociological literature as important indicators of self-concept.

> and others, positive peer interaction, and support and understanding when mistakes are made.

Positive self-concepts serve to protect individuals from self-doubt and feelings of inferiority, and a lack of them can threaten an individual's survival and well-being. When concepts of the self are threatened, defensive actions are likely to occur. These include avoidance of threatening situations, abuse of others, and drug and alcohol abuse or dependency (Locke, 1996). Work, it is argued, is crucial to self-esteem because under certain conditions, it may enhance or diminish concepts of the self (ibid.). However, despite the recognition that self-concepts are important to our understanding of the stress-health relationship, the importance of this relationship is largely ignored in the workplace (Cole et al. 2002). Cole et al (2002) found that the relationships between work stress and distress was almost entirely mediated by mastery and self-esteem. Self-esteem was also discovered to be both a cause and a consequence of burnout in police officers (Rosse, et al.1991). Additionally, self-esteem was associated with all three components of burnout (emotional exhaustion, personal accomplishment, and depersonalization) in the expected direction (Janssen et al. 1999). Similarly, Jimmisen (2000) found that while work control reduced the negative effects of work stress, this was evident only for those who perceived high self-efficacy (a dimension of self-esteem) at work. Self-efficacy also moderated the effects of work control on job satisfaction and somatic health . Buffering effects of mastery (which will be discussed below) and self-esteem were found for chronic strain and psychological distress for women regardless of household structure or employment status (Avison, 1995).

To sum up, self-esteem is an evaluation of one's self-worth and efficacy. The evaluation of the self begins in early childhood largely as a result of parent-child relationships and relationships with various agents of socialization. It is largely accepted that one's sense of worth and efficacy is relatively stable over the life course; however, certain circumstances can enhance or diminish self-esteem for various periods of time. Most importantly, self-esteem is postulated to be a process and in the case of diminishment of the self, early interventions may help an individual to evaluate one's self in a more positive light. Additionally, it appears that self-esteem may function as an antecedent, mediator, moderator, or consequence of the stress process. In this dissertation, my focus is on both the direct (antecedent) and the buffering or moderating effects of self-esteem and mastery on depression.

Mastery

Like self-esteem, Pearlin et al. (1981) see mastery as an important dimension of the self-concept that can be diminished in the stress process, but which also functions as a protector or enhancement of the self against threats to it. They define mastery as, "... the extent to which people see themselves as being in control of the forces that importantly affect their lives" (p. 340). For Mirowsky and Ross (1986), mastery is likely the most important self-concept that can affect an individual's distress. Behaviourists discuss (the absence of mastery) as "learned helplessness;" cognitive psychologists refer to it as "external versus internal locus of control;" and sociologists quite often use terms such as "powerlessness," "personal efficacy," "self-directedness," and "fatalism versus instrumentalism" in addition to the concept of mastery (ibid, pp 26-27).

Regardless of the label, mastery is the product of social interaction and personal experience that lead the individual to believe that the choices or efforts one makes will influence, one way or another, the outcome of a situation (Mirowsky and Ross 1986; Seeman 1999). It is argued that children who grow up in an environment which promotes their feelings of self-worth, and provides a "secure base" from which the child can explore and learn, will develop a healthy sense of mastery and autonomy, making them more effective problem-solvers (Masten et al. 1990).

Having a low sense of mastery can affect a person's distress in two ways, by demoralizing the self and by preventing the individual from engaging in active coping to resolve a situation (Masten et al. 1990; Mirowsky and Ross 1986; Pearlin et al. 1981; Seeman 1999; Skau 1995; Thoits 1995). As Pearlin et al (1981, p. 340) state,

> Persistent role strains can confront people with dogged evidence of their own failures – or lack of success – and with inescapable proof of their inability to alter the unwanted circumstances in their lives. Under these conditions, people become vulnerable to the loss of self-esteem and to the erosion of mastery.

Persistent failure leads to a sense of fatalism. Attempts to solve problems seem useless (Mirowsky and Ross, 1986). In turn, the individual is less motivated to try to cope and becomes more passive in the face of difficulties. This results in greater distress (ibid).

It appears that individuals who appraise themselves in a negative light are more likely to experience threats to their emotional well-being. Such negative introspection is associated with depression when self-concepts are low (Schieman 2001). In fact, it has been demonstrated that the perception of mastery mediates the association between socio-economic status (SES) and health to the extent that, when SES is low and mastery is high, lower SES groups will have health outcomes comparable to high SES groups (Seeman, 1999). Similarly, Turner and Avison (1992) found that a high sense of mastery mediated the relationship between unresolved life events and distress for both low and high SES groups.

Recent research continues to demonstrate the positive impact of mastery on health and well-being. It has been shown, for example, that Canadian women suffer higher levels of depression than men, especially in their reproductive years due to, amongst other things, feeling out of control or overwhelmed and having a low sense of mastery (Stewart et al. 2004). Depression and low life satisfaction in European university students is associated with low perceived control and mastery (Wardle et al. 2004). Mastery and self-efficacy have been demonstrated to have a buffering effect on depression in patients suffering from certain chronic diseases (Bisschop et al. 2004). Mastery has also been found to have a moderating effect on the health status of older adults who have experienced economic hardship at different stages in life (Pudrovska et al. 2005).

In summary, many studies have demonstrated that positive self-concepts (i.e. high mastery and high self-esteem) act as a coping or buffering resource against stressors that can otherwise lead to declines in physical and psychological health. Having a high sense of mastery is believed to be an important personal resource in the face of stress because it fosters positive coping strategies and protects the individual from threats to the self. It enables people to carry on in the face of adversity. The investigation of self-esteem and mastery provides valuable and important insights into the stress process and mental health outcomes (Cole et al, 2002).

The Importance of Demographics

According to Pearlin et al. (1981), studies of stress and depression should incorporate social and economic antecedents and "fundamental statuses" such as gender, marital status, and income, since depression can vary and be influenced by these statuses. The following discussion highlights how demographic characteristics relate to the stress process.

The impact of age on depression varies with circumstances but, for the most part, age tends to have negative effect on depression (Bradshaw and Gilbrech 2001; Charles et al. 2001; Gale 1994; Turner and Marino 1994) and is positively related to satisfaction with life (Hamarat et al. 2001). Age can take its toll on psychological well-being when, for example: the role of caregiver is added to the roles of spouse, parent and employee (Williams 2003); coping efforts are perceived to be ineffective (Hamarat et al. 2001); there is an accumulation of negative events over the life course (Kraaij and De Wilde 2001); and older people are unable to utilize needed health services (Gale 1994).

Similarly, studies have shown that depression is also influenced by gender, socio-economic status and marital status. However, the relationships between these statuses and depression seem to be conditional. It has often been reported in the literature that women suffer more distress than men, especially when they are in the labour force (Lai 1995; Roxburgh 1996; Turner and Marino 1994) and are mothers (Roxburgh 1996). Shipley and Coats (1992) found that low income, unmarried women reported higher levels of stress due to financial strain, child-care issues, and stress from work compared to women who were married or single, but with high income (Shipley and Coats 1992). Avison (1995) also found that unmarried mothers and unemployed women had higher levels of depressive symptoms than their counterparts. Additionally, single parents experienced more caregiver and financial strain than their married counterparts. Aro et al.'s (2001) found that the best predictors of women's psychological health were current physical health, satisfaction with received support, quality of intimate relationships and, to a lesser extent, being divorced or separated and being unemployed. Interestingly, they found that having children, socio-economic status, and income had no effect on depression.

Many of these studies were interested in women's depression, perhaps because researchers largely assumed that women suffer more depression than men, while men exhibit alternative disorders in response to stress (Nazroo 2001). Nazroo (2001) set out to explore these presumed gender differences in depression. His study revealed that gender differences did not exist as a result of measurement artifacts. He also found that men did not develop more alternative disorders than women. Nor were women more sensitive to particular events than men because of socialization. Moreover, biological explanations of sex differences in depression were not conclusive. Instead both men and women were at a higher risk of depression in roles that had particular salience for each sex. That is, for women, risk of depression was higher following crises that "involved children, housing and reproduction" (p.5). Men were at high risk for depression when there was a crisis involving "finances, work and marital relationships" (p. 5). Finally, when a particular role had similar salience for both men and women, each had the same risk for depression.

Pakriev et al. (2002) found similar results in their study. For men, depression was associated with poor socio-economic status and negative family factors. For women, depression was associated with poor physical and mental health. Low self-esteem was associated with depression for both men and women (Pakriev et al. 2002). Leinonen et al.'s (2002) study revealed that economic hardship was stressful for both mothers and fathers. For fathers, general and specific pressures were associated with anxiety and social dysfunction. Mothers, on the other hand, experienced depressed mood and anxiety specifically as a result of economic pressures (Leinonen et al. 2002).

It appears that socio-demographic characteristics do influence levels of psychological distress, but not necessarily in a predictable linear or gendered fashion. Rather, age, gender, socio-economic status and marital status appear to operate differently depending on other conditions or circumstances.

SUMMARY

This Chapter briefly described the physical properties of the stress response and offered a basic definition of stress as the anticipated or experienced thwarting of goals. The experience or anticipation of a stress event sets into motion neurological and physiological as well as negative emotional responses in an attempt to deal with the situation. However, I have argued that stress is a process and it is persistent or chronic strains that are most important to our understanding of stress. These chronic strains need to be resolved through active coping styles in order to avoid negative physiological or psychological outcomes. I have also argued that active coping styles are related to one's sense of mastery and self-esteem in dealing with threats to the self.

As Pearlin et al. (1981) noted, the stress process includes sources of stress, mediators of stress and outcomes of stress. To fully understand the stress process, therefore, one has to look at the antecedents of stress (e.g., the social-structural conditions of life) in addition to the more immediate sources of stress (such as work and non-work stressors). Adlerian, Attachment and Parental Rejection theories highlight the link between childhood development and one's sense of self-esteem and mastery in adulthood. For Adler, childhood development shapes the lenses through which the child and later on the adult sees the world. A child's perspective is shaped by his or her responses to the situations and conditions of life. These lenses provide them with a view of the world that influences their ability to cope (or not) with the vagaries of life. Largely as a result of the childhood development process, the adult has a pretty basic understanding of their sense of self (i.e., self-esteem or mastery). These core self-concepts (or personal resources) are likely influence how an individual will cope in the face of stressors. If concepts of the self are high, an individual is more likely to engage in active coping behaviours, which may resolve threats to the self thereby avoiding negative health consequences.

In short, I argue that the personal resources of self-esteem and mastery are important moderators and mediators of the stress process. In addition, I have reviewed research that demonstrates that social support can reduce the effects of negative events or stressful experiences on physical and mental health outcomes. Finally, research shows that a number of socio-demographic factors can play various roles in the stress process.

Having outlined the complexity and breadth of the stress process, I now turn to a detailed discussion of how this process plays out in the context of paid work.

CHAPTER 3 - THE STRESS PROCESS AND THE CONTEXT OF WORK

INTRODUCTION

Much of who we are and what we do is wrapped up in our work. From a humanist perspective, work is the essence of humanity. Humans are essentially creative and it is through work that we fulfill our human potential (Krahn and Lowe 2002, p. 407). Work is also central to our personal well-being, and it is through work that individuals develop a sense of self-identity and self-worth that enables them to meet their personal, familial, community and societal needs (ibid, pp 408-411). However, the type of work, the amount of time spent in work, specific job demands, and the amount of control one has over one's job can be very stressful and can also impact a worker's ability to balance work and family responsibilities. In, short, work can be very satisfying, but it can also be very stressful.

This Chapter begins with a discussion of the wide range of potential work stressors. I describe Karasek et al.'s (1986) model of job strain and argue that it is the most appropriate approach to take (despite the criticisms leveled at it) to understand the stress process in the context of work. I further discuss the importance of incorporating work-family interference and other sources of stress into my own model of the work stress process. Additionally, I review research on how social support and coping styles can affect work stress. Finally, I show how recent work stress literature is beginning to recognize the value of adding personal resources to the model of the work stress process. This is the central contribution of this dissertation.

WORKPLACE HAZARDS

According to Cox et al. (2000), current approaches to study work stress include two basic stressor components: physical hazards and psychosocial hazards. Physical hazards include noise, physically dangerous work that can lead to injury or death, exposure to toxins, or extremes in temperature or humidity (pp. 64-65). In addition to their potential to cause physical harm, physical hazards also have psychological effects. When a worker realizes that their job exposes them to harm it may leave them with feelings of apprehension, suspicion and fear (p.62).

Cox et al. (2000) define psychosocial hazards as the organization and management aspects of work, which can result in psychological or physical harm (p. 67). For example, stressful work situations occur when the demands of work exceed a worker's knowledge, skills, or needs. This is especially evident when workers have little control over the work they do or lack the support they need to do their work (ibid).

Psychosocial stressors can originate in a broad spectrum of sources that range from organizational culture to an individual's work schedule, or in other words, from both the "context of work" and the "content of work" (Cox et al. 2000, p 68). The context of work includes: a) the culture of the organization and how it functions, b) an individual's role in the organization, c) prospects for career development and job security, d) decision-making latitude, e) interpersonal relationships in the workplace, f) conflicting demands of work and home, and g) the physical working environment and work equipment (ibid). The content of work, on the other hand includes: a) task design and skill utilization, b) workload and timing of work, and c) how work is scheduled (ibid).

Summing up, Cox et al. (2000) suggest that to study stress in the workplace, researchers must take into account the physical and psychosocial conditions of work, the individuals' perception of negative conditions, and their ability to cope with these conditions. Further, researchers need to be aware that there are consequences to stressful work conditions that manifest themselves in changes to workers' cognitive, behavioural and physiological functions (p. 43).

KARASEK'S JOB DEMAND-CONTROL- SUPPORT (DCS) MODEL

Karasek et al.'s (1986) model of work stress takes into account the physical and psychosocial conditions of work as outlined above. It has been employed in a wide range of studies that look at how individuals cope with these stressors in relation to a number of psychological and physiological outcomes. As I explain below, I consider it to be the most useful model of work stress for the questions addressed in this study. [8]

Before describing in detail how Karasek et al.'s (1986) model works and why it is still an important model to use, I will discuss a number of criticisms of the model. Originally, Karasek's (1979) model (referred to as the job strain model) focused on two constructs that varied independently in the work environment: job demands and job control (also known as job decision latitude). Karasek (1979) was theorized that the positive effects of job decision latitude could mitigate the negative effects of job demands. To test this hypothesis, Karasek constructed an interaction term, job strain; a product of job control and job demands. Studies that used various formulations of this interaction term found mixed support (Jimmieson 2000). A detailed discussion of the methodological issues surrounding the job strain interaction term can be found in Chapter 4 of this dissertation.

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[8] The Effort Reward Imbalance (ERI) model proposed by Siegrist and Peter (1994) offers another approach to the study of work stress. While it does share some attributes with the job demand-control-support model, I found it to be less useful for several reasons. For example, the ERI model is based on the stimulus-response paradigm, which is inappropriate to my model given my emphasis on individual's understandings of potential stressors and on their perceptions of self. Moreover its measure of coping is less clearly articulated than measures I use in my model

Further criticism of Karasek's model was made by Johnson (1986) who argued that the "demand/control" model needed to be expanded to include social support because of the importance of social relations at the workplace. Johnson's (1986) primary hypothesis was that jobs that are high in demands, low in control and low in support have the highest risk of illness (Karasek et al. 1998). As a result of Johnson's work, Karasek et al. (1986) incorporated measures of co-worker and supervisor support in their *Job Content Questionnaire*.

Sargent and Terry (2000) suggest that research into the moderating effects of social support in Karasek et al.'s (1986) model needs to be extended to examine the roles of different sources of support. This is necessary, they argue, to provide clear support for the stress-buffering model and to identify "which sources of support are most beneficial to at-risk employees" (p. 247) so that appropriate interventions can be made in the workplace. I will explore the three sources of social support in my dissertation, namely: supervisor support, co-worker support and support from family and friends.

Kristensen (1995) summarizes a number of additional theoretical and methodological criticisms of Karasek's (1986) model. Below I summarize Kristensen's main criticisms. With respect to theoretical issues, Kristensen (p. 21) argues that a) the range of possible endpoints of various outcome measures especially as they relate to cardiovascular disease to be explained by the model is poorly defined; b) the model disregards individual differences in susceptibility and coping potentials; and c) the model disregards major questions regarding the power structure at the worksite. In response, I would say that point a) refers to the varying manifestations of cardiovascular health. As I will discuss, the use of a valid, reliable and well-used measure of depression as an outcome in my study should at least make the end points clear. Point b) is very important to the research I am conducting here. As I have already discussed in Chapter 2, I will be exploring individual differences in susceptibility through my analyses of self-esteem and mastery, and I will also explore coping "potentials."

One of Kristensen's (1995) major methodological criticisms is based on Karasek's use of large, representative samples with broad occupational categories. In a nutshell, Kristensen suggests that unless one can identify specific jobs with their respective psychosocial work environment one is unable to make suggestions on how to change the work environment. He suggests that "the solution to this problem is to use study populations consisting of a few, but carefully chosen occupations." (p. 21). I think this is an important criticism and one I have tried to overcome by studying a single organization with a somewhat diverse occupational mix.

Calnan et al. (2000) argue that the general criticisms regarding Karasek et al.'s (1986) use of "objective" measures are a somewhat overstated (see for example, Ostry et al (2003). First, individual perceptions of job demands, control and social support are really subjective measures. Second, the use of "subjective" measures allows one to address fundamental questions such as "why is it that the same job can be described as stimulating and challenging by one worker, but as unmanageably stressful by another?" (p. 298). They also argue that work stress should not be conceptualized as a purely objective phenomena and that the "definitions that workers ascribe to their experiences and the socio-cultural factors that shape them should also be included in the work stress model" (p. 299). As I have already discussed, the question of why people cope with similar stressors while others do not is central to my dissertation. So, despite these criticisms, I remain convinced that Karasek's (1986) model is a very useful starting point for my research.

For Karasek and Theorell (1990), the theoretical premise of the demand-control-support model is that "learning occurs in situations that require both individual psychological energy expenditure (demands or challenges) and the exercise of decision-making capability" (p. 92). This is referred to as "Active Learning" where both psychological demands and decision latitude is high. Individuals who have decision-making latitude make choices about how to cope with stressors. If the coping behaviour is effective, it will be incorporated into the individual's repertoire of coping strategies. In other words, the individual has learned something new about himself or herself, which will be used for future reference.

Karasek and Theorell (1990) hypothesize, therefore, that continuous or active learning will occur when challenging situations are matched by the individual's control or skill in dealing with them. Moreover, active learning enhances feelings of mastery and self-esteem (p. 99 and p. 255). Additionally, they argue that low status workers who work for an organization that promotes a learning structure as opposed to a top-down hierarchical structure are more likely to feel empowered. This, in turn, could lead to higher self-esteem (p. 245). The crucial issue is the degree to which the individual has the ongoing control or latitude to decide what strategies to employ after going through a process of discovering which strategies are likely to succeed or fail (pp 92-93).

On the other end of the spectrum, where decision latitude is low and psychological demands are high, accumulated strain is likely to occur. It is in this situation that social support can help to moderate the effects of strain. Additionally, Karasek and Theorell (1990) argue that feelings of mastery (and, I would contend, feelings of self-esteem) can also inhibit perceptions of strain (p. 99). While they argue that feelings of self-esteem should probably be considered as "broad response orientations," they do concede, "the same processes might link childhood experiences with adult personality orientations" (pp 98-99). In short, Karasek and Theorell (1990) propose that there is a connection between how an adult copes with work stressors and how experiences in childhood can determine a particular pattern of responses to socio-environmental challenges.

The DCS model has been widely used in relation to a host of outcomes. For example the model has been used in studies to explain: cardiovascular disease (Malinauskiene et al. 2004; Schnall et al. 1994; Steptoe et al. 2000; Theorell and Karasek 1996; Theorell et al. 1998); self-reported physical health (De Jonge et al. 2000; Eriksen and Ursin 1999; Fox et al. 1993; Ostry et al. 2003); various mental health outcomes such as burnout, depression and perceived stress (Bliese and Castro 2000; Calnan et al. 2004;

Calnan et al. 2000; De Lange et al. 2004; Heuven and Bakker 2003; O'Connor et al. 2000; Pelfrene et al. 2001; Sargent and Terry 2000; Searle et al. 2001; Stansfeld et al. 2000); sick leave (Bliese and Castro 2000; Moreau et al. 2004; Stansfeld et al. 2000); job satisfaction (Bliese and Castro 2000; Calnan et al. 2000; O'Connor et al. 2000; Pelfrene et al. 2001; Sargent and Terry 2000); and work performance (Bliese and Castro 2000; Sargent and Terry 2000; Searle et al. 2001).

More recent research continues to provide support for the "job strain" model. For example, Heuven and Bakker's (2003) study of a small sample of flight attendants found that job strain helped to predict burnout for this occupational group. Ostry et al. (2003) found that the job strain model predicted poor self-reported health status in a large sample of B.C. sawmill workers. Calnan et al.'s (2004) study of a representative sample of British employees reported a number of relevant significant findings. First, they found that job strain significantly predicted mental distress. Additionally, they noted that job demands in interaction with social support exerted a significant independent effect on mental distress. Finally, the authors suggest that the job strain model is particularly useful for explaining work stress for specific occupations. Specifically, Calnan et al.'s (2004) study revealed job stress was best explained by low job control in sales occupations, whereas, lack of social support best explained job stress for craft workers.

The job strain model has also found support in longitudinal studies. De Lange et al. (2004) were able to show that job strain and social support were linked to mental health across time among Dutch workers. Similarly, Moreau et al. (2004) tested the predictive power of the DCS model with respect to sickness absence in a longitudinal study of Belgian workers aged 35 to 59 years. They found a significant association between employees in high strain jobs with low social support and repetitive spells of sickness absence.

In addition to the job demand-control-support measures, I believe job insecurity is also an important variable in Karasek et al.'s (1986) conceptual model. Although I found only one study in the work stress literature that looks directly at the role of job insecurity in the DCS model, the results of this study point to the importance of analyzing its impact. Kausto et al.'s (2005) study of a large sample of Finnish employees in the municipal technical sector found that workers who perceived their organization as unfair and who also experienced job insecurity were at a higher risk of suffering from emotional exhaustion and stress symptoms. However, recent research into the area of "precarious employment"[9] shows that respondents in precarious employment situations reported poorer health, and higher stress-related tension and exhaustion than other Canadians employed in standard jobs, largely due to high levels of uncertainty (Lewchuk, et al. 2003). These findings stress the importance of incorporating subjective health measures when studying the effects of job insecurity.

Other measures in the Karasek et al. (1986), which I describe in detail in Chapter 4, include macro-level decision-making, supervisory role, physical job demands, and physical work environment.

Theoretically, I find the DCS model appealing because, like Pearlin et al.'s (1981) general model of the stress process (discussed in Chapter 2), it speaks to the social structural conditions of work that can impinge on an individual's well-being and behavior and the moderating role of social support (Karasek et al. 1998). Moreover, similar to Pearlin et al.'s general model, the demand-control model is concerned with the ongoing or chronic conditions of the work environment (ibid). Therefore, like Pearlin's model, Karasek's model includes stressors that are located in the social-structural conditions of life as well as the mediators and buffers that can lessen these effects and the outcomes of stress. Further, Karasek's model lends itself to the possibility of incorporating work stress into a more comprehensive model of the stress process.

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[9] Defined by Lewchuk et al. (2003, p 23) as: "a cumulative combination of atypical employment contracts, limited social benefits, poor statutory entitlements, job insecurity, short tenure and low wages."

As mentioned earlier, my research is particularly interested in the stress buffering effects of moderator variables (i.e., self-esteem and mastery) which I have argued previously, are typically well established in childhood, providing individuals with the lenses through which they interpret their world. Karasek's model relies on self-reported "objective" and subjective responses that are implicitly based on individual perceptions. And, indeed, it is these individual perceptions that are of critical importance because they are shaped by variations in prior experiences (Cox, et al, 2000, p. 50).

In summary, the job demand-control support model is widely used in current work stress research. In fact, as evidence of its widespread acceptance, it has been recently employed in a large management initiative to promote individual and organizational wellness in Great Britain (Mackay et al. 2004, p. 1). Therefore, I will use Karasek's model to examine at the stress process using the work environment as one, albeit major, source of stress. In addition, given recent developments in the literature, the inclusion of work-life conflict measures and other influential variables (to be discussed below) will further enhance my model.

ADDITIONAL STRESS FACTORS

Work-Family Interference

The ability to balance work and family has become a major concern in today's workplaces as dual-earner families have become the norm and work requirements have intensified. Work-life conflict at the organizational level is associated with reduced individual commitment to the organization, intent to quit, absenteeism, and job dissatisfaction (Duxbury and Higgins 2002, p. viii), not to mention the costs involved in providing health benefits, the hiring, training and retaining of valuable employees, and worker productivity and efficacy.

Work-life conflict affects families in terms of family satisfaction, intimate relationships, and parenting style. At the individual level, work-life conflict has an impact on psychological and physical health, satisfaction with life, and role strain. At the societal level, an increase in the use of health care services (Duxbury and Higgins 2002, p. viii) and a decrease in community involvement have been attributed to increases in work-life conflict (Canadian Association of Administrators of Labour Legislation 2002, p.4; Kasper 1999; Martin 2001).

Linda Duxbury and Chris Higgins have done extensive research on the topic of work-life conflict in Canada. They were involved in the first national study of work-life conflict in 1991 and conducted their own national study in 2001. Their latest and most comprehensive study included a very large sample of over 31,500 employees from 100 medium and large private sector organizations as well as a large number of employees from seven federal departments. Duxbury and Higgins (2001, p. viii) state that the purpose of their research is to illustrate the extent to which work-life conflict affects both employees and employers, and ultimately reduces productivity at the individual, the firm, and the societal level.

Duxbury and Higgins' perspective on work-life conflict has evolved over the years and reflects the position I take in this dissertation. It sees stress or conflict as a process that is not solely located in the workplace. Further, it recognizes that conflict can be moderated through organizational structures and individual coping strategies. According to Duxbury and Higgins (2001, p. viii):

> This research is based on the premise that an individual's ability to balance work and life will be associated with both work and non-work demands… as well as a number of key demographic characteristics … [and that balancing these demands will be associated with outcomes at the organizational, family, individual and social levels.] …. Further it is postulated that these relationships will be moderated by factors associated with both the organization in which the employee works… as well as personal strategies that the employee and his or her family use to cope…

Duxbury and Higgins (2003, p.1-5) conceptualize work-life conflict as including four major domains: role overload; work to family interference; family to work interference; and caregiver strain. Role overload is having too much to do in a given amount of time; the demands of multiple roles are too great to be performed adequately or comfortably. Work to family interference occurs when work demands and responsibilities make it more difficult for an employee to fulfill family role responsibilities at home. Family to work interference occurs when family demands and responsibilities make it more difficult for an employee to fulfill work role responsibilities. Caregiver strain is a multidimensional construct which is defined in terms of "burdens" or changes in the caregiver's day-to-day lives, which can be attributed to the need to provide care for a dependent person.

In summary, it is important to study work-life conflict because, on the family side, high work-life conflict can lead to a number of negative outcomes as revealed by Duxbury and Higgins' (2003). The most negative impact on the family comes from role overload and work to family interference. From the perspective of the employer, high work-life conflict is associated with high perceived stress, burnout and depression. And, of course, all of this affects the organization's "bottom line."

A number of other recent studies support Duxbury and Higgins' findings in general, although specific findings vary. For example, Kirchmeyer and Cohen's (1999) study of women employed in a Canadian school district found associations between work-life conflict and increased absenteeism, intentions to quit and perceived stress. Grant-Vallone and Donaldson's (2001) longitudinal study of non-professional employees from the Los Angeles area revealed that work to family conflict predicted employee well-being consistently for both women and men and in different family situations . In contrast, Kinnunen et al.'s (2004) longitudinal study of a random sample of employed Finns revealed that work-family conflict at Time 1 predicted job dissatisfaction, parental distress and psychological symptoms among women. However, among men, low levels of well-being at Time 1 predicted work-family conflict at Time 2 . Noor's (2003) study of employed British women with children found that work to life conflict was related to job satisfaction.

Demerouti and Geurts (2004) conducted a study of 751 employees of the Dutch postal service and examined a number of work-home interactions to see if positive or negative perceptions of home and work had more influence on psychological health complaints. Their results showed that employees who experienced negative interactions between work and home also perceived their working conditions as unfavourable. They also experienced the most psychological distress in contrast to those who perceived their work as having a positive influence.

Thus, maintaining work-life balance is critically important for employees and employers alike. It is a necessary component of both organizational and personal well-being in addition to the well-being of families, communities and the economy (Canadian Association of Administrators of Labour Legislation 2002, p. 4). In fact, as the population ages, the issue of work-life balance will probably become a bigger factor in the workplace. For instance, more families may find themselves looking after children as well as aging parents. At the same time, as the population ages and labor-force participation expands, the number of non-employed family members available to provide care will decline. This means that the demands of elder care will become more of a burden to employed caregivers, which ultimately can affect the way they work (Bond et al. 1997, p. 15).

Other Work and Non-Work Stressors

Duxbury and Higgins (2003) suggest that it is also important to include the amount of time an employee spends working unpaid overtime in studies of work stress. This concept extends Karasek et al's (1986) concept of job demands. Other work-related factors that are included in my analysis, such as employment contractual arrangements, full-time versus part-time work, in addition to job insecurity, speak to the important issue of precarious employment (Lewchuk, et al. 2003; Vosko et al. 2003). In addition I explore the moderating effect of personal resources and with respect to the relationship between feelings of job symptoms of depression. Measures of personal resources are subjective and an important addition to the model because they provide us with a better understanding of the relationship between work-related stressors and depression.

In addition to workplace factors, Karasek et al. (1986) feel it is important to examine the effects of race because members of a disadvantaged racial group might suffer from discrimination or harassment on the job. To my knowledge, there are no studies that investigate visible minority status (or race), physical disability, or discrimination and harassment as sources of stress in the workplace I believe these variables are important in the study of workplace stress because harassment and discrimination are stressors. Disability status would also be stress producing. Furthermore, individuals who have a physical disability might themselves be subject to harassment or discrimination in the workplace. Also included in the my model is a measure of financial security, to tap the issue of precarious employment, as well as occupational and socio-demographic controls.

MODERATING VARIABLES

Social Support

As discussed in Chapter 2, Pearlin et al. (1986) have argued and shown that social support from one's family and friends is an important moderator of the stress process. It has also been determined that social support in the workplace can affect psychosocial health (Karasek and Theorell 1990, p. 69). Social support at work consists of positive social interactions with one's co-workers and supervisors (ibid). The main mechanisms through which social support in the workplace can affect employee well-being are by: a) acting as a buffer between psychological stressors and adverse health outcomes; b) providing important social contacts and social structure that impact on "basic physiological responses" that maintain long-term health and the "acquisition of new knowledge;" and c) facilitating active coping behaviours that indirectly affect health and productive behaviour (ibid).

At the organizational level, perceived workplace support has been shown to affect productivity and commitment. Bond et al.'s (1997) analysis of the American *1997 National Study of the Changing Workforce*, found that the quality of jobs and the perceived supportiveness of employers were the most powerful predictors of productivity. On the other hand, they reported that individuals who had more demanding jobs and less supportive working environments experienced more negative spillover into their family life, which then impacted on their personal well-being and that of their families (p. 1). For Lowe and Schellenberg (2001), healthy and supportive workplaces create "robust employment relationships" which, in turn, lead to higher levels of trust and commitment toward the employer (p. xiii). Strong employment relationships help to reduce workplace stress, according to Lowe and Schellenberg (2001), and have beneficial effects on a worker's job satisfaction, career development, employee morale and absenteeism (p. xv).

Additional research has shown workplace social support is associated with general well-being (Barak and Levin 2002), psychological distress (Barak and Levin 2002; Bliese and Castro 2000; Cole et al. 2002; De Lange et al. 2004; Gilbreath and Benson 2004; Roxburgh 1996), job satisfaction (Barak and Levin 2002; Sargent and Terry 2000), burnout (Greenglass et al. 1996; Lloyd et al. 2002; Sargent and Terry 2000) and sickness absence (Stansfeld et al. 2000; Moen and Sweet 2004).

What is most difficult to discern from the literature is whether various sources of support (i.e., supervisor, co-workers, or family and friends) have more beneficial effects than others, since few studies look at all three sources of support. Two studies that have looked at the three sources of support found that source of support and their effects have different buffering potential. In their study of burnout amongst teachers, Greenglass et al. (1996) concluded that of the three sources of social support, the most important was from one's co-workers. Sargent and Terry (2000) investigated all sources of support using Karasek's job strain model in a sample of clerical workers in a university setting. They found that the buffering effect of social support varied in relation to the source of support and the outcome under study. They concluded that it is necessary to examine the different sources of social support in relation to the negative effects of high job strain. Oxenstierna et al.'s (2005) study of a national sample of Swedish employees (excluding supervisors) revealed that long-term sick leave (60 days or more) was mainly associated with poor co-worker support. Prevalence of pain and physical symptoms was related to both supervisor and co-worker support; and the absence of support from both sources was associated with high levels of physical symptoms. Following their lead, I also look at all three sources of social support in my analysis, namely co-worker social support, supervisor social support and social support from family and friends.

Coping

Referring back to the discussion in Chapter 2, coping is a complex process that involves cognitive appraisal and behavioural strategies to manage stress. However, the research literature is still equivocal on the best approach to study coping. This may be due, in part, to the complex nature of coping in addition to the inconsistency of findings. In addition, studies of coping are difficult to compare because measures of the concept vary from study to study.

As Kirkby and Skues (1998) argue, there are gender differences in how one responds to different stressors. These differences may relate to the type of workplace in which men and women are typically employed, but are also influenced by the various roles individuals take on at home and in families. They conclude that males and females are vulnerable to different stressors, differ with respect to specific coping styles, and have differential access to work-related coping resources.

The literature does show that effective problem-solving or action-taking strategies lead to better psychological health. In contrast, avoidant coping styles are generally linked to poor psychological health. Rick and Guppy (1994) have shown that white collar public sector employees who use more problem-focused coping behaviours have fewer problems coping at work, higher levels of job satisfaction, and better levels of general mental health. In their study of caregivers of dementia patients, Stowell et al. (2001) discovered that active coping was negatively associated with perceived stress and that avoidance coping exhibited a positive relationship. As a result, those who were engaged in avoidance coping were more likely to experience a negative impact to their immune system leaving them more vulnerable to poor health outcomes.

In summary, coping is an important part of the stress process at work. Successful coping leads to higher levels of job satisfaction, productivity, and physical and mental health. Additionally, successful coping is related to one's sense of control (Troup and Dewe 2002). Presumably, the higher one's sense of control, the more successful one is in coping with stressors at work. Consequently, coping strategies are also incorporated into my analysis.

Personal Resources

I have argued in Chapter 2 that along with social support and coping, personal resources or concepts of the self that reflect an individual's experiences over the life course are of critical importance in understanding stress in general. They should also be central to studies of stress in the workplace. It has been argued most cogently by Pearlin et al. (1981) that personal resources, such as self-esteem and mastery, can moderate the effects of stress in the social context. Therefore, I suggest that personal resources could also moderate the relationship between workplace and non- work stressors and depression. However, it is also possible that they might have independent direct effects on depression.

Mastery

Karasek and Theorell (1990) acknowledge that personal resources, specifically mastery, could enhance their job demand-control model (pp. 98-99). They theorize mastery as an intervening variable that inhibits the perception of job strain and subsequent outcomes. However, while I recognize that work stressors could influence mastery, I have also argued (in Chapter 2) that mastery is a personal resource largely shaped early in life. In other words, mastery could also be seen as an exogenous (antecedent) variable. In fact, Thoits (1995) argues that mastery can have both a direct and buffering effect on psychological distress.

While mastery is implicitly part of Karasek and Theorell's (1990) model, I believe it should be explicitly included in studies of work stress. In this dissertation I ask why it is in the face of similar stressors, some people cope while others do not. And I have hypothesized that individual differences in mastery and self-esteem may be theoretically important in answering the question. Thus, my research proposes that personal resources, in addition to having a direct effect, can have moderating or buffering effects on the stress process, much like the role of social support.

Self-Esteem

Compared to studies of mastery, there are a few more studies in the work stress literature that have examined the role of self-esteem. Locke et al. (1996) wrote a seminal paper on the importance of self-esteem in the workplace. They argue that work is crucial to one's sense of self-esteem because it is through work that one makes sense of the world and sustains their existence. Self-esteem is associated with improved thinking and decision-making, higher career goals, better job performance and job satisfaction (p. 16). Further, Locke et al. claim that better thinking and decision-making can be seen as both a cause and effect of self-esteem. As an effect, a person who has high self-esteem tends to have more confidence in his or her judgement and is more likely to make appropriate choices than someone with low self-esteem (p. 16). As a consequence, when an individual makes appropriate choices, this leads to further positive self-assessments and enhanced self-esteem (p. 17). In short, people with high self-esteem are more likely to feel good about themselves, have greater confidence, be more satisfied with their jobs and their lives, more resistant to threats in the environment, and have a high sense of control over their lives (p. 26).

Rosse et al (1991) conducted a longitudinal study of the relationship between self-esteem and burnout in police officers. Their findings suggest that self-esteem can be both a cause and effect of burnout, especially on the dimension of emotional exhaustion. However, results also showed little support for self-esteem as a buffer to burnout. They conclude that self-esteem may be an important predictor of burnout, but once burnout has occurred, self-esteem is diminished. Janssen et al. (1999) report similar results in their cross-sectional analysis of burnout in Dutch nurses. They found that self-esteem was significantly (negatively) related to emotional exhaustion, depersonalization and positively associated with personal accomplishment. Although there was no evidence of a moderating effect, the authors cautioned that the relatively small sample size (N = 156) might have underestimated this effect.

Kalimo et al. (2003) also investigated the relationship between self-esteem and burnout in their longitudinal study of Finnish employees of a large, international forestry company. Self-esteem was shown to help prevent burnout. Their results suggest that well-being is based on strong personal resources such as self-esteem and challenging work in a supportive environment.

Clearly, there is limited but nevertheless strong support for the inclusion of personal resources (i.e., mastery and self-esteem) in studies of work stress and its effects. Although the evidence suggests that self-esteem has a direct effect on burnout, it is yet to be determined if this relationship would be maintained when using depression as an outcome measure. However, I expect that self-esteem and mastery will have a direct impact on levels of depression when controlling for other important variables in the equation.

It has been shown that personal resources can have a mediating effect on depression in the workplace. But, again, it is yet to be determined whether moderating effects will be found. To examine the moderating effect of personal resources, I use responses to questions about level of self-esteem and mastery at the age of 18 in my analyses. I have argued (in Chapter 2) that personal resources at the age of 18 have predictive power for current levels of depression. By examining the moderating potential of personal resources at age 18, I am able to avoid some of the "cause and effect" problems of probing the link between current personal resources and current depression (i.e., which is the cause and which is the effect). Therefore, I predict that when stress is high and personal resources at age 18 are high there would be a reduction in depression. My investigation of the moderating role of personal resources is a unique contribution to the stress literature.

SUMMARY

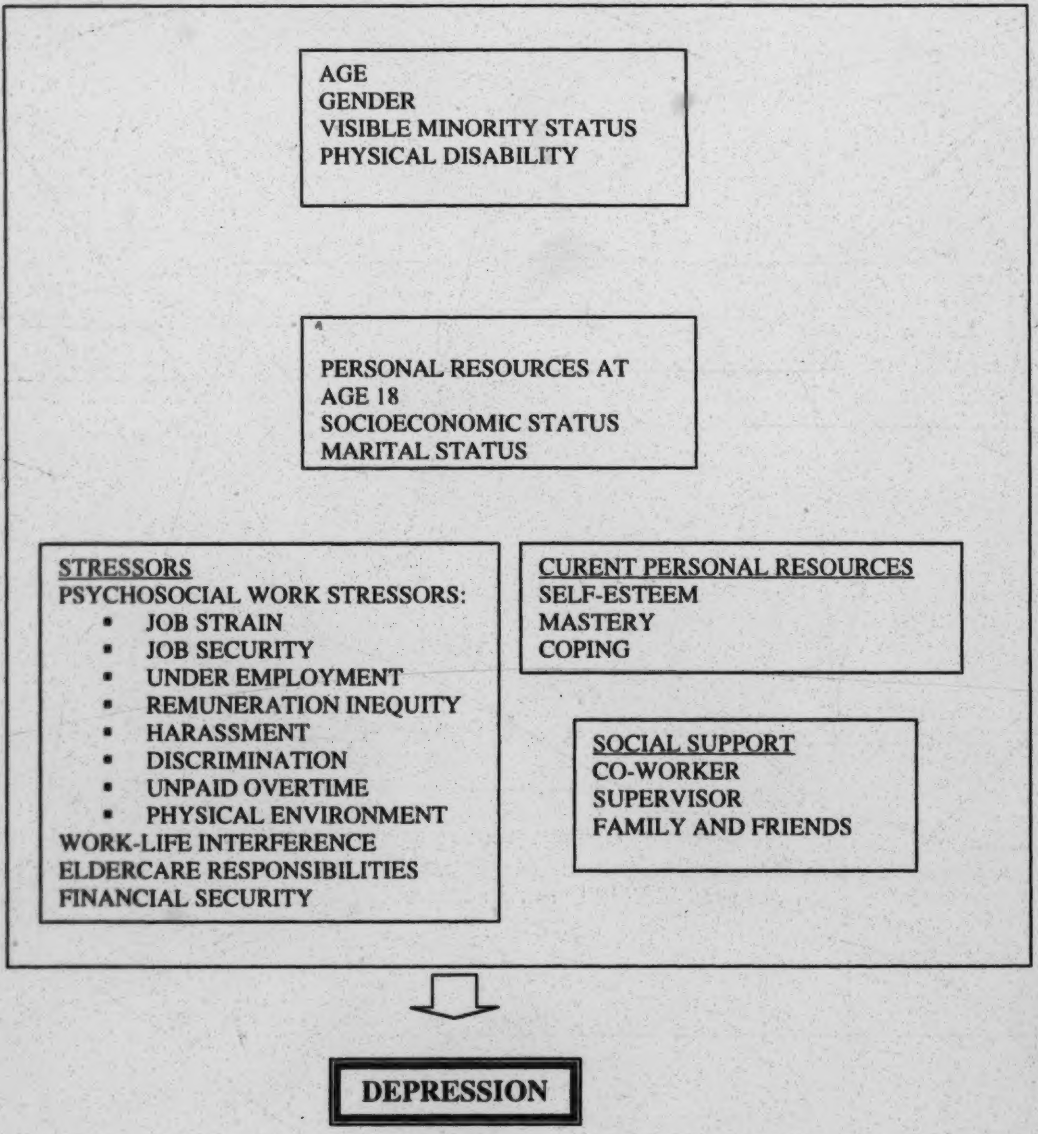
This Chapter has outlined current theoretical thinking in the work stress literature.

I have argued that Karasek's demand-control-support model is the most appropriate model to help explain stress in the workplace. It is also necessary to look at the additional stressors associated with work-family interference. For example, current research supports the merit of including working unpaid overtime and having eldercare responsibilities in the study of the stress process in the context of work. Although very little research has been done on the role of minority status, having a physical disability or being a victim of discrimination or harassment in the workplace, I believe that these too are important factors to consider when studying the determinants of work stress.

Equally important for my study of the stress process that focuses on work is the incorporation of social support from work and non-work sources. But most importantly, the use of different coping strategies, and the role of personal resources (both at an earlier point in life and currently) are of critical importance in my model of the work stress process. To repeat, the overriding question that has shaped this study is, "Why is it in the face of similar stressors that some people cope while others do not?"

The complete model that I have developed in Chapters 2 and 3 to answer this question is diagramed below. Given the many potential direct, mediating, and buffering effects I have discussed, it is very difficult to precisely diagram the causal relationships. However, some of the relevant factors are ascribed statuses (e.g., age, gender) others are experiences or status changes that occurred earlier in life (e.g., education, personal resources at age 18), while still others are current statuses and experiences. Consequently, the visual layout of the model reflects a temporal pattern (top to bottom) but not an explicit causal model.

Fig. 3.1 A Model of the Stress Process in the Context of Work


AGE
GENDER
VISIBLE MINORITY STATUS
PHYSICAL DISABILITY
PERSONAL RESOURCES AT AGE 18
SOCIOECONOMIC STATUS
MARITAL STATUS
STRESSORS
PSYCHOSOCIAL WORK STRESSORS:
JOB STRAIN
JOB SECURITY
UNDER EMPLOYMENT
REMUNERATION INEQUITY
HARASSMENT
DISCRIMINATION
UNPAID OVERTIME
PHYSICAL ENVIRONMENT
WORK-LIFE INTERFERENCE
ELDERCARE RESPONSIBILITIES
FINANCIAL SECURITY
CURENT PERSONAL RESOURCES
SELF-ESTEEM
MASTERY
COPING
SOCIAL SUPPORT
CO-WORKER
SUPERVISOR
FAMILY AND FRIENDS
DEPRESSION

RESEARCH QUESTIONS AND HYPOTHESES

As I have stated previously, my main research question asks why it is that some people cope better with stressors, all things being equal. From this question other questions emerge: do individual differences in personal resources have a role in predicting depression?; do personal resources moderate the relationship between stressors and depression?; what role do various sources of social support play in relation to depression?; and, do different types of coping behaviours affect depression differentially?

As I have argued at a number of points, I expect that some of the answers to my core question will be found in the examination of the role of personal resources (i.e., self-esteem and mastery) as determinants and moderators of work stress. Consequently, the following hypotheses will be tested in Chapters 5 and 6.

Direct Effects

Other things being equal, I expect to find that:

1. Individuals with higher job strain will report increased levels of depression.
2. Individuals with more work-family conflict will report greater amounts of depression.
3. Individuals with more social support will report reduced levels of depression.
4. Individuals who engage in active coping behaviours will experience less depression.
5. Individuals who engage in avoidance coping behaviours will report more depression.
6. Individuals with higher levels of self-esteem and mastery will report lower levels

of depression.

7. Individuals reporting higher self-esteem and mastery at the age of 18 will report lower levels of depression.

Moderating Effects

1. Given any source of stress, the impact on depression should be lower among people with higher levels of self-esteem or mastery at the age of 18.

Having theorized the stress process that focuses on work, and having outlined the multi-dimensional model of stress that will be assessed in this dissertation, I now turn to a discussion of my research methods.

CHAPTER 4 - RESEARCH METHODS

I begin this Chapter with a brief summary of Karasek et al.'s (1986) Job Content Questionnaire. I then describe the research site in which I collected my data, and the development of my questionnaire. This is followed by a discussion of my data collection methods, survey response rates, and characteristics of my sample. The last half of the Chapter describes the measures I developed for my statistical analyses.

KARASEK'S JOB CONTENT QUESTIONNAIRE

As I concluded in Chapter 3, Karasek et al.'s (1986) job strain model is the most appropriate model to use in my research, although I will also supplement their model by adding other work-related stressors and stressors related to work-family interference. In addition, I will bring coping, mastery, and self-esteem, three different personal resources into the model as both predictors and moderating variables. Finally a number of other socio-demographic and employment variables, and financial security will also be introduced to the analysis.

However, the Karasek et al. demand-control-support model is at the core of my analysis. Karasek et al. (1986) developed the Job Content Questionnaire (JCQ) as an instrument to measure and assess social and psychological characteristics of jobs in relation to various physiological and psychological outcomes (Karasek et al., 1998). The main components of this widely-used questionnaire are measures of psychological demands, decision-making latitude, social support, physical demands, physical work environment and job insecurity.

The JCQ has been validated cross-culturally in such countries as Sweden, Quebec, Canada, the Netherlands, the United States, and Japan, to name a few (Karasek et al. 1998). The JCQ has been shown to have predictive validity for a number of stress-related chronic diseases, mental exhaustion, depression, anxiety, musculosekeletal injury, pregnancy disorders and immune system dysfunction (Karasek et al.1998).

In March, 2002 I contacted Dr. Karasek to seek permission to use the JCQ. In May of that year, I received confirmation of our contractual agreement along with copies of the questionnaire and related documents. There was no charge for the use of the questionnaire. However, a copy of my data file and codebook for academic purposes was requested to assist Karasek's research team in further developing their research instrument.

RESEARCH SITE

In January, 2003, my PhD supervisor and I approached the general manager of a large, municipal department in a western Canadian city about possibly collecting data from employees of this department. We were given permission in the spring of 2003 to conduct a study of the determinants of workplace stress in the department in the fall of 2003. We were interested in this particular organization because it had recently been restructured to incorporate three narrowly focused departments into a single integrated multi-service department. The impact of this restructuring, and the resulting occupational mix, made the department an interesting research site.

Because the department had recently been restructured, staff were working in a potentially stressful environment that required them to learn new ways of thinking about how to deliver municipal services. Furthermore, the department now had an unusually diverse occupational profile. The occupations of department employees included senior level management and administration, various professional occupations, clerical and customer service staff, technical support workers, shop workers, and indoor and outdoor blue collar workers. This diversity allowed for a comparison of work stress across various occupational statuses. In addition, the range in occupational groups provided the opportunity for comparison across various demographic categories (e.g., gender, education, income and age).

Much of the earlier research on work stress has been limited to single occupational groups, most often in the service provider professions (e.g., teachers, health care professionals, policemen, managers, social workers). Consequently, my multi-occupational study can enhance our understanding of stressors or coping strategies. According to Kirkby (1998), studies that focus on single occupational groups do not allow as comprehensive an examination of the broader aspects of work stress. Working in the human service professions is well known as a major source of stress linked to burnout (Maslach and Jackson 1986). Therefore, it is difficult to determine "how stressful is stressful" when looking at "extreme" single occupation groups.

Granted, a number of recent studies on work stress compared different occupational groups (e.g., Barak and Levin 2002; Cole et al. 2002). But, typically this kind of research involves population samples or national survey databases. The problem, then, is that the "tradeoffs inherent in bargaining for inclusion of work stressor content in national surveys" leaves the researcher with too few question-items (Cole et al. 2002, p.

11). Moreover, such databases can be rather old[10] and perhaps not as relevant to current employment experiences.

In contrast, a large sample study conducted in one organization across a variety of occupational groups and hierarchical levels allows for a comparison of differences found across occupational groups or job hierarchies, which can then be attributed to the work and family experiences of people in these occupations.

QUESTIONNAIRE DEVELOPMENT

Following feedback from my PhD candidacy committee and after obtaining the JCQ, I developed the first draft of my questionnaire. In June, 2002, I conducted a pilot study of the questionnaire among staff and students in the Department of Sociology at the University of Alberta. Volunteer respondents were asked to comment on the timing, flow and content of the instrument. I received 35 completed questionnaires and many valuable comments. For example, some respondents suggested that response categories should be consistent and in the same direction (e.g., negative to positive or low to high). Comments on the length and wording of questions were used to reduce confusing or unnecessary language. Some questions were eliminated because they were felt to be redundant or too personal. The revised study proposal and the questionnaire were then presented to the general manager of the municipal department that I planned to study.

The study proposal was accepted by the head of the department in April, 2003 and a departmental advisory committee[11] was struck in May. The advisory committee was set up to finalize the content of the questionnaire, develop a communication strategy to publicize the study, and advise on the methods by which the data were to be collected. The advisory committee first met in June to provide feedback on the questionnaire. The committee finalized the content of the questionnaire in July, 2003 (Appendix 4.1). A number of items proposed by department and union members were included in the questionnaire. These questions were of specific interest to the department and are not included in the analysis reported in the following Chapters. However, the bulk of the items in the questionnaire reflect the theoretical interests of the researcher. Although there were some minor revisions to some of the JCQ items (discussed below in the "Measurement" section), most of the original questions were maintained.

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[10] For example, Cole et al (2002) analyzed a 1994 national data set.

[11] The advisory group comprised the researcher, research supervisor, two members of the department, and one representative of each of the two unions involved in the department.

The questionnaire was designed to be self-administered and took approximately 30 minutes to complete. Respondents were advised not to provide any information that could compromise their anonymity. In the unlikely event that any of the questions might cause "emotional difficulty," a telephone number was provided at the end of the questionnaire that people could call for support. Once the advisory committee agreed to the content of the questionnaire and the process of data collection and retrieval, this information was sent to a University of Alberta Research Ethics Board for approval. The Board approved the study in July, 2003.

COMMUNICATION STRATEGY

Departmental staff members were first informed about the study by letter at the beginning of September, 2003. Senior management and the heads of the department's management association and the two unions signed the letter. I also sent a letter introducing myself and the purpose of my research. The letters were distributed to all employees along with their pay packet information. The letters endorsed the study, encouraged staff to participate, and indicated when the study was to commence. Promotional posters were placed throughout the various work environments to increase awareness of the study. In addition, staff were updated regularly about the study through the department's electronic newsletter. Another letter of support from the above signatories, plus a letter from me, was subsequently included in the survey package and delivered to potential respondents. Electronic reminders to encourage completion of the questionnaire were given two and four weeks after the survey commenced.

Throughout the study process, staff members were informed that participation was voluntary and anonymous. All communication material provided contact information if anyone had any questions or concerns. Also, employees were notified that only aggregated results of the study would be made publicly available.

IDENTIFICATION OF THE SAMPLE

The advisory committee recommended that all permanent and provisional[12] employees (N = 1046), and a pseudo-random sample (or systematic sample)of temporary staff (N=454) be surveyed, for a total sampling frame of 1,500. These numbers were based on September, 2003 department employment records and satisfied the requirements of the researcher to obtain a sample size of at least 500 (based on an expected 30% response rate). Personnel in the Human Resources Department provided address labels for all potential respondents. A pseudo-random sample of temporary staff was achieved by selecting every third label until the required sample of 454 was reached. Because of the seasonal nature of many temporary workers' terms of employment, a number of their survey packages were returned, indicating that the employment contract for this person had expired in the previous few weeks (i.e., student employees were returning to school). In these 42 cases, new replacement temporary workers were sampled.

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[12] The department awards provisional status when an employee reaches a target number of hours over a one-year period. Prior to achieving this status an employee is considered temporary. Time spent in a provisional placement does not necessarily lead to permanent status. Permanent status positions are awarded on the basis of open competitions. Permanent status employees receive full benefits while provisional employees receive fewer benefits than permanent employees but more than temporary staff.

QUESTIONNAIRE DISTRIBUTION

The questionnaire was distributed in an envelope addressed to the employee along with a return envelope addressed to the researcher, care of the Population Research Laboratory (PRL) at the University of Alberta. Survey packages were delivered to each employee through the department's inter-departmental mail system on September 30th, 2003. Managers and supervisors had been instructed to ensure that the survey packages went directly to the employee named on the envelope. Staff had been encouraged to complete the questionnaire during normal working hours. Once completed, questionnaires were sealed in the return envelope and sent to the Department's Mail Services' distribution centre. I picked up the questionnaires on a weekly basis, and delivered them to the PRL for processing.

I also assisted PRL staff in the processing of the data. Because the University of Alberta Department of Sociology awarded me a research grant, I was able to hire PRL staff to produce a manual which included the questionnaire codebook, frequency distributions, a dictionary of variables, and open-ended comments. The PRL also provided me with an electronic copy of the survey database. I personally performed all subsequent statistical analyses presented in this dissertation.

RESPONSE RATES

Of the original 1,500 survey packages, 91 packages sent to either permanent or provisional employees were returned as undeliverable because the department no longer employed the individual. This reduced the sampling frame to 1,409. Because only 67 questionnaires were received from temporary staff (a 15% response rate)[13] I have not included them in the analysis. Fifty-six per cent of permanent staff and 64% of provisional employees responded to the survey for an overall response rate of 60% (N = 561). This is a very good response rate and provides a great deal of confidence with respect to the research findings.

DEMOGRAPHIC PROFILE OF THE SAMPLE

The sample of 561 employees is representative of the department's demographic profile with respect to gender, age, education and employment status. The sample was evenly split across gender lines (52% were males and 48% were females). The mean age was 41 years, and 63% of the sample were married or cohabiting. Thirty-nine percent had children under the age of 18 living at home. Eight percent reported being a member of a visible minority group while nine percent reported having a physical disability that might disadvantage them in the workplace. Just over ten percent of the sample were involved in caring for an elderly parent or relative.

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[13] Temporary workers in this study comprised mainly students working for the summer with the intention to go back to school in the fall. A separate preliminary analysis (not shown here) revealed that their attitudes to work and the work environment were much more positive than those of permanent and provisional workers. To include them in the analysis would skew the results and do a disservice to the employees who were more permanent in nature.

Sample members were highly educated; 67% had at least a post-secondary diploma or degree. Overall, just over 60% of respondents reported a gross, combined household income of at least $50,000.

EMPLOYMENT CHARACTERISTICS OF THE SAMPLE

Most of the sample members (85%) worked full-time hours (30 or more hours per week). Men were more likely to be full-time employees (97%, compared to 77% of women). Two-thirds of sample members had permanent status. Females were more likely than males to have permanent status (73% and 59%, respectively). Table 4.1 shows the occupational distribution of males and females in the sample. Women were over-represented in clerical occupations while men were more likely to occupy technical and trades positions, which is consistent with Canadian employment data. Women and men were equally likely to be in management and professional occupations.

Table 4. 1 Employment Characteristics by Gender

	%		
Occupation (N=500)	**Male**	**Female**	**Total**
Clerical	5	28	16
Technical and Trades	55	30	43
Management and Professional	40	42	41
Total	**100**	**100**	**100**
Hours of Work			
Full-time Hours	97	77	85
Part-time	3	23	15
Total	**100**	**100**	**100**
Employment Status			
Permanent	59	73	66
Provisional	41	27	34
Total	**100**	**100**	**100**

MEASUREMENT

Dependent Variable

Depression, as measured by the Centre for Epidemiological Studies – Depression Scale (CES-D) (Radloff 1977), was selected as the most appropriate outcome measure for this research. This scale uses items that relate to one's psychological mood, namely, behaviours and feelings that are well-known indicators of depression. However, a number of other variables were also considered as possible outcome measures, including perceived stress (Cohen, et al. 1983) and burnout (specifically, emotional exhaustion and personal accomplishment) (Maslach and Jackson 1986). Depression was felt to be the most appropriate outcome variable for a number of reasons.

Cohen et al. (1983) found the Perceived Stress Scale (PSS) to be highly correlated with depression as measured by the CES-D instrument. In two college samples, the authors found correlations of .76 and .65 between the PSS and the CES-D.[14] However, they argued that the two scales were nevertheless measuring different concepts. To demonstrate this point, they partialled out the correlations of the PSS and the CES-D with physical symptomatology and found that each scale independently predicted physical symptomatology. Thus, perception of stress can lead to long-term physical and psychological consequences, but it may not. A close look at the content of the PSS reveals that it relies on measures of daily hassles and irritants that could, if they persist, have long-term effects. But it is the more enduring stresses and strains of workplace life that are basic to this analysis.

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[14] In my study the correlation between the CES-D and PSS was also 0.76

Furthermore, many of the PSS items tap into the concept of individual control, (e.g., "How often …have you been able to control the way you spend your time?"). An examination of the PSS and the mastery scale I discuss below revealed they were also highly correlated (r = -0.574). Mastery is one of the core concepts of my research. Therefore, it made theoretical sense not to use the PSS as an outcome variable because of its overlap with mastery.

Using burnout as my outcome measure would also limit the generalizability of this research. Maslach's Burnout Inventory (MBI) was developed specifically "to measure experienced burnout in a wide range of human services workers" (Maslach and Jackson 1986, p. 14). Indeed, the wording of many of the MBI items relates directly to the "employee-recipient" relationship (ibid. p 15) and is therefore limited to relationships in the workplace. Because I am also interested in experiences and circumstances outside the realm of employment, and because many of my sample members were not human service workers, I decided that depression (the CES-D Scale) was a more appropriate outcome measure. Depression has long been linked to the psychosocial nature of work and non-work stressors, both of which will be investigated in my research.

The validity and reliability of the CES-D has been established numerous times in general and clinical populations and across various age groups and ethnically diverse populations (Riddle et al. 2002; Solberg and Burkhart 2004). Avison (1995) describes Radloff's (1977) results of four separate tests of the scale's internal reliability

(Chronbach's Alpha)[15] that ranged from .84 to .90. Avison's (1995) study produced an alpha of .94[16]. This level of reliability is also evident in other studies (e.g., Robins et al. 2001). Further, the CES-D instrument has demonstrated good discriminant and convergent validity across diverse populations and age groups (Avison 1995; Riddle et al. 2002; Solberg and Burkhart 2004).

According to Riddle (2002) items in the CES-D measure four sub-constructs:

1. Depressed affect (e.g., "I felt that everything I did was an effort.")
2. Reduced positive affect (e.g., "I was bothered by things that usually don't bother me.")
3. Somatic and retarded activity e.g. ("I did not feel like eating; my appetite was poor,") and
4. Interpersonal problems (e.g., "I talked less than usual.")

There are 14 items in the CES-D scale. In my questionnaire, respondents were given 5 response categories where 1 = "Disagree Strongly" and 5 = "Agree Strongly." For my analysis, responses to the 14 items were summed and divided by 14. Thus a high score of 5 represents high depression. In my sample, the mean score for this scale was 2.08, and the standard deviation was 0.72. Chronbach's Alpha for the scale was 0.91. Appendix 4.2 contains a detailed description of the development of this and other measurement scales.

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[15] Chronbach's Alpha is a measure of scale reliability. An Alpha of 0.7 indicates that all of the items contribute to the discriminating power of the scale. A value of less than 0.7 may indicate there are two few items in the scale or that some items are measuring the same thing (Keller, et al. 2000).

[16] My analysis produced an Alpha of 0.91

Independent Variables

Central Model

My central model consists of work and non-work stressors and social support variables. The majority of the work stressor and social support variables in the model are based on Karasek et al.'s (1986) model. The following section describes the variables and scales Karasek et al. (1986) developed for their job demand-control-support model and that are measured in their *Job Content Questionnaire* (JCQ). In addition to these measures, I have also included other work stressors such as being a victim of harassment, scales that measure work-family interference (e.g., work to life conflict), general social support and personal resources (e.g., self-esteem, mastery and coping), and financial security. Control variables, such as socio-demographic and employment characteristics are also used in the analysis. The details of these measures are discussed after I have introduced Karasek et al.'s job demand-control-support model. Specific details of each the items in the various scales are located in Appendix 4.2.

Replication of the Job Demand-Control-Support Model

Karasek et al.'s *Job Content Questionnaire* measures social and psychological job characteristics identified in the job demand-control-support model. Central to this model is the proposition that job strain is the result of high psychological demands, low control on the job, and low co-worker and supervisor support (Karasek, et al. 1998). The job demand-control-support model is an integral piece of my central model. It represents the work stress part of the broader model that will be tested in this research.

A number of steps were involved in the development of the measures to test the job demand-control-support model. The most important of these was the creation of the job strain interaction term.

I felt it was important to improve on Karasek's (1979) measure because Karasek's formulation was somewhat confusing; that is, difficult to construct and interpret and job strain has been inconsistently measured by others researchers. Karasek's original formulation of the interaction term is job strain = [Demands – Decision Latitude + C]. In this formulation, C is a constant term that, according to Karasek (1979, p.308):

> … places three quarters of the sample in the category where too many demands make the absolute value expression positive, and one quarter in the category where an excess of decision latitude makes the expression positive. A value of the constant 1.5 was empirically selected to accomplish this.

I found this formulation very vague and difficult to replicate, as I believe others in the literature may also have found. For example, Schnall and Landsbergis (1994) conducted a meta-analysis of 36 studies that looked at the relationship between job strain and cardiovascular disease. Although they found consistent relationships between the effects of job strain and risk of cardiovascular disease, they also found that job strain was measured using various formulations that were not defined by the authors (p. 387).

O'Connor et al. (2000) suggest that, after 15 years of research, Karasek's original formulation of the interaction term has come into question with respect to its statistical appropriateness. O'Connor et al. (p. 641) provide an overview of some of the strategies various researchers have used to construct a more meaningful measure. For example, some consider job strain as a continuous variable, "computed as the ratio between psychological job demands and job control (by means of dividing job demand scores by job control scores)." Others have used a multiplicative interaction term and "some have utilized cut-off points above and below the median for demands and control to classify employees" using Karasek's (1979) typology[17]. O'Connor et al. (2000) operationalized job strain using the Karasek's (1979) typology. To create their variable, "high and low latitude and demands were defined by median cut-off points on the job control and job demands scales" (p.641). Still others just use the separate components of job strain (job demands and control) to measure job strain (see Kawakami et al. 1995 and Calnan et al. 2000). However, I feel there is a need to create an even simpler and more interpretable measure of job strain so that future researchers can begin to use the same measure.

Job Strain Interaction Term

The job strain interaction term consists of three sub-scales: skill discretion, decision authority, and psychological job demands. Job strain measures the degree to which an individual experiences high psychological demands at work but has little control over his or her job. Measures of skill discretion and decision authority were combined to create the "Decision Latitude Scale," which measures the extent to which an individual has control over his or her job. The Decision Latitude Scale was then multiplied by the Psychological Demands Scale to create the Job Strain interaction term. The following discussion outlines the specific steps taken to create the Job Strain interaction term.

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[17] Karasek's typology has four job classifications: high strain, low strain, active and passive. Table 4.3 illustrates these classifications.

The skill discretion sub-scale measures the degree to which one's skills relate to the job and the degree to which one has discretion over the use of these skills. For example, respondents were asked to what extent they agreed or disagreed with the statement, "My job requires a high level of skill." Responses were based on a 5-point Likert scale that ranged from "strongly disagree" to "strongly agree." The six items were summed and divided by six for a total possible score of 5, which represents high skill discretion. Although Karasek et al. (1998) reported a Chronbach's Alpha of 0.74 for this scale; my analysis produced an Alpha of 0.84.

The decision authority sub-scale was created with two items,[18] coded like the items described above. Even with the two-item scale, an alpha of 0.64 was obtained, which is comparable to Karasek's finding of 0.68, which included all three items.

The next step was to create the decision latitude scale by combining the skill discretion and decision authority sub-scales. Because the two sub-scales contained a different number of items (6 and 2, respectively), the two sub-scales were summed and divided by 2 to give each sub-scale equal weighting (as per Karasek et al.'s (1986) original formulation). The resulting decision latitude scale has a total possible score of 5 representing high decision latitude. I obtained a mean score of 3.6 for this scale with a standard deviation of 0.75.

The psychological job demands scale in my analysis contains 8 of 9 original items. A typical statement was, "My job is very hectic." Three of the items were reworded for clarity (Appendix 4.2). Karasek's original item, "My job requires working very hard" was removed.[19] The remaining items in this scale were scored using the same 5-point Likert scale. The scale was divided by the number of items for a total possible score of 5 (high psychological job demands). The mean score was 3.1 for this scale with a standard deviation is 0.78. The Chronbach's Alpha for my scale (0.84) was higher than Karasek's (0.72), which included all nine items.

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[18] One of Karasek's items was deleted ("I have a lot of say about what happens on my job.") because the advisory committee felt it was very similar to another item ("My job allows me to make a lot of decisions on my own").

The final step in the process was to create the job strain interaction term to measure the core concept in Karasek's model. High strain on the job strain scale is represented by low scores on decision latitude and high scores on psychological demands. In order for the job strain interaction term to range from low to high strain, it was necessary to reverse code the weighted decision latitude scale. I did this by multiplying the weighted decision latitude scale by –1 and then adding six. The job strain interaction term was then created by multiplying the reversed decision latitude scale by the psychological job demand scale. Job strain has a total possible score of 25, where 1 equals high decision latitude and low psychological demands (low strain) and 25 equals low decision latitude and high psychological demands (high strain). A person who scores high on this derived variable would be someone experiencing extensive job demands but would have little decision-making authority to deal with these demands. Examination of a frequency distribution for job strain variable revealed a mean score of 7.4, which is quite low and possibly reflective of the occupational distribution of the sample, with a standard deviation of 2.75. The scale demonstrated a wide range of scores from 2.5 to 22.1.

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[19] The advisory committee felt this question was ambiguous and could easily be interpreted to refer to either physical or psychological job demands.

A preliminary correlation analysis of the CES-D scale with the psychological job demands scale, the weighted job decision latitude scale, and the job strain interaction term was performed to investigate the bivariate effects of the two scales and the job interaction term on depression. Table 4.2 shows that the job strain interaction term had a stronger association (r = 0.315) with depression than either of the independent scales that were used to create the interaction term.

Table 4.2 Zero-order Correlations of Depression

Job Decision Latitude	.247**
Psychological Job Demands	.137**
Job Strain	.315**
** (p = .001)	

Table 4.3 illustrates the basic components of the job strain interaction. At one extreme, high job decision latitude multiplied by low psychological demands would produce a score of 1 indicating a low strain job (top left cell). A person in such a job would not experience high psychological job demands, but would have a lot of control over the work they performed. At the other extreme, low job decision latitude multiplied by high psychological job demands would indicate a high strain job producing a score of

25 (bottom right cell). A person in this position would experience many demands on the timing and quality of work, for example, but their ability to make autonomous decisions about these demands would be very limited. In summary, the range of scores for "Job Strain" begin at the top left quadrant, where strain is low, to the bottom right quadrant, indicating high strain.

Table 4.3 The Job Strain Interaction term

	Psychological Job Demands	
Column 1 **Job Decision Latitude**	**Column 2** Low = 1	**Column 3** High = 5
High = 1	"Low Strain" job HL Min. Score = 1	"Active" job HH
Low = 5	"Passive" job LL	"High Strain" job LH Max. Score = 25

Based on Karasek's depiction (1979)

Another way of illustrating the parameters of the job strain interaction term is to look at the total possible scores. Table 4.4 demonstrates how the scores are obtained. Multiplying column 1 by column 2 produces a job strain score. For example, when job decision latitude is high (score = 1) and psychological job demands is low (score = 1) then job strain is low (score = 1).

Table 4.4 Possible Scores on the Job Strain interaction term		
Column 1 Decision Latitude High to Low	**Column 2 Psychological Demands Low to High**	**Column 3 Job Strain Scores (Column 1 X Column 2) Low to High**
1	1	1
2	2	4
3	3	9
4	4	16
5	5	25

Supervisor Social Support

This scale measures how much support an employee perceives he or she may receive from his or her supervisor. An example of an item in this scale is, "My supervisor is concerned about the welfare of those under him or her." Again, as with other measures, respondents were asked how much they disagreed or agreed and answered on a five-point scale. The five supervisor social support items were summed and divided by five. Therefore, the total possible score is 5, indicating high supervisor social support. The mean score for this scale was 3.6 with a standard deviation of 0.98. Chronbach's Alpha was 0.89 which compares favourably to Karasek's 0.85.

Co-worker Social Support

Co-worker social support is a six-item scale that taps into an individual's perception of co-worker supportiveness in the workplace. Respondents were asked to indicate their level of disagreement or agreement (on a 5-point scale) to statements such as: “People I work with take a personal interest in me.” Items in the scale were summed and divided by six for a maximum score of 5 representing high co-worker social support. The mean score for this scale was 3.6 and the standard deviation was 0.84. Chronbach’s Alpha was very satisfactory at 0.88, which is higher than Karasek’s 0.76.

Macro-level Decision Authority

According to Karasek et al. (1998), the macro-level decision authority scale assesses “the possibility of participatory influence on organization level issues” and participation in work-group and union decision-making. Unfortunately, the authors do not provide any information regarding the reliability of this scale, claiming that it is so little used that no information is forthcoming. My search of the literature confirms this. However, one of the main purposes of this research was to replicate Karasek’s model, so it was decided to include macro-level decision authority in this analysis.

Of the six items in the scale, one asks whether or not an individual supervises others and if so, how many employees he or she is responsible for. There are two items that relate to how much influence the union has on department policy and individual participation in making union policy. In addition, three items refer to an individual’s participation in work group or departmental decision-making. For example, respondents were asked, “There is at least some chance that my ideas will be considered about department policy.” Two of the items were reworded for clarity (see Appendix 4.2).

Not all respondents in this study were union members, so the scale was adjusted to include all participants. This was accomplished using a two-step process. First, the scale included all six items identified above (divided by the six) for unionized employees.

Second, for non-unionized employees the two items referring to unions were removed leaving the scale with four items, which were summed and divided by four. As before, the total possible score for this scale was 5 (high macro-level decision authority). The mean score for this scale was 2.7 with a standard deviation of 0.73. Chronbach's Alpha for this scale for all sample members was reasonable at 0.64.

Job Security

Karasek's scale is called job insecurity and all the items are negatively coded. That is, a high score on this scale would indicate poor job security. Feedback from my pilot study suggested that it would be less confusing if all the items were consistently coded. Therefore, response categories were recoded so that a score of 1 ("Strongly Disagree) indicated low job security and a score of 5 ("Strongly Agree") indicated high job security. One of Karasek's original items, "How steady is your work?" was dropped because this information was captured elsewhere in the questionnaire. Two questions were reworded for clarity (see Appendix 4.2). An example of the resulting five items in the scale is, "My prospects for career development and promotions are good." The items were summed and divided by 5 producing a maximum score of 5 referring to high job security. The mean score was 3.4 and the standard deviation was 0.8. Compared to Karasek's Chronbach's Alpha of 0 .59, my scale performed very adequately with an Alpha of 0 .71.

Physical Job Demands

This four-item scale captures the amount of physical effort required on the job. Two of Karasek's original items were combined and reworded into: "I am required to work for long periods of time in uncomfortable positions" (see Appendix 4.2). The items were summed and divided by four for a total possible score of 5 indicating high physical demands. The mean score for physical job demands is 2.4 and the standard deviation is 1.0. The Chronbach's Alpha for this scale compares favourably with Karasek's (0.78 and 0.82, respectively).

Remaining Scales in the Central Model

Physical Work Environment

This six-item index was developed with input from the Advisory Committee and measures the degree to which individuals experience discomfort in their work environment. The scale includes items such as: "I feel that my work area is unhealthy." The items in this index were summed and divided by six for a maximum score of 5, which reflects a poor working environment. The mean score for this index is 2.5, the standard deviation is 0.87 and Chronbach's alpha is 0.77.

Work/Family Conflict Scales

Selected measures of the work/family interface were adapted from MacDermid (2000) who coordinated a panel of work-family researchers to identify and recommend key concepts that relate to current thinking in the work-family conflict literature. Based on their recommendations, I selected measures that tapped into the mental strain and time demands of the work/home interface. Other items related to behaviours and energy, but I felt they were unnecessary. The measures of mental strain and time demands seemed to fit in with the demands outlined by Karasek, et al. (1986) that I use in my analysis. There are two separate scales that measure work-family interference. The first measures work to life interference and the second, life to work interference. Both scales ask how often the respondent has experienced a number of situations during the past month. Responses are measured on a 5-point Likert scale from 1 (never) to 5 (most of the time).

Work to Life Conflict

Work to life conflict is concerned with how much work spills over into home life. There are four items in the scale. A typical item is: "I was preoccupied with my work while I was at home." The items were summed and divided by four to produce a maximum score of 5 indicating high work to life conflict. There are no comparable statistics for this scale as a) the scale has only recently been developed and b) only items that referred to strain and time were included in my version of this scale. However, an Alpha of 0.81 was observed. The mean for this scale was 2.4 and the standard deviation was 0.93.

Life to Work Conflict

This scale focuses on problems at home and how they affect performance on the job. As with the above scale, three items were selected from the original set that reflected strain and time. In addition, the advisory committee added two items that captured the demands of family and personal relationship issues. Items in the scale included statements such as: "My personal responsibilities made it difficult to get along with my supervisor and co-workers the way I would like." The items were summed and divided by five for a total possible score of 5 indicating high life to work conflict. Again there are no statistics with which to compare our data. However the Alpha for this scale was quite high at 0.82. The mean was 1.7 and the standard deviation was 0.63.

General Social Support

General social support[20] measures the extent to which individuals perceive they can rely on their family, friends and colleagues in times of need. There are eight items in this scale. Respondents were asked to indicate whether they disagreed or agreed with each based on a 5-point scale. Because one of the items refers specifically to a spouse or partner, the scale was adjusted to include all respondents (Appendix 4.2). Specifically, for respondents who were living with a spouse or partner, all eight items were included in the scale and responses were summed and divided by eight for a total possible score of 5. For single respondents only seven items were used. An example of an item in this scale is the statement: "No matter what happens, there is always someone I can count on for help and support." The scale had a mean score of 3.9 with a standard deviation of 0.82. Chronbach's Alpha was a very satisfactory 0.83.

Financial Security

Financial security is a strain indicator. That is, respondents who reported low financial security would be considered to be suffering from financial strain. Respondents were asked: "How would you describe your financial situation?" and answered on a five-point scale with 1 labeled 1 "Very Poor" (Not enough money to cover my needs) and 5 labeled “Excellent” (More than enough money to cover my needs and those of my family). The mean for this variable was 3.0 and the standard deviation was 1.0.

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[20] Dr. John Gartrell and Dr. George Jarvis, formerly of the Department of Sociology at the University of Alberta, developed the General Social Support Scale (not published). It was part of a questionnaire that I used for my data set in my Master's Thesis (Werner-Leonard 1991).

Working Unpaid Overtime

For Duxbury and Higgins (2001, p. 45-46) the total number of hours spent at work each week (including unpaid overtime) is a reliable predictor of role overload, work to life conflict, and perceived stress. Further, overworked employees are more likely to suffer a work-life imbalance (Canadian Association of Administrators of Labour Legislation 2002, p. 6). Michie and Williams (2003) also found in their systematic review of the work stress literature that working long hours was one of the most common predictors of psychological ill health and sickness absence.

Respondents were asked how many hours of unpaid overtime they worked in a typical week. Responses to this variable ranged from 0 to 50 hours per week with a mean of 2.3 and a standard deviation of 5 hours per week. Because of the skewed distribution of reported hours worked per week, this variable was recoded so that anyone who worked one hour or more unpaid overtime was coded as 1 and all others were coded as 0.[21] One-third of the sample reported working unpaid overtime.

Underemployment

If a worker’s pay expectation does not match the income he or she is receiving, feelings of resentment and tension are likely to occur and can result in work-related stress. To measure this concept, respondents were asked, “Given your education, experience and responsibilities in your current job, do you feel you are earning: More than you deserve, (1), About the right amount, (2) or, Less than you deserve," (3) (Krahn and Lowe 1993). Forty-six percent of the sample felt they earned less than they deserved.

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[21] I conducted a separate analysis, not shown here, of the original unpaid overtime variable. The results revealed that the variable had no independent effect on depression when included in the regression of the central model (i.e., work and family stressors and buffers and depression).

Overqualified for Job

Feeling overqualified for one's job is a widespread problem for well-educated workers. Such perceptions of underemployment may result in feelings of job dissatisfaction (Krahn and Lowe 2002, p.431) and perhaps job stress. Respondents were asked to answer "No" (1) or "Yes" (2) to the question, "Given your education, experience and responsibilities in your current job, do you feel that you are overqualified for your current job?" (Krahn and Lowe 1993). Thirty-six percent of the sample reported that they felt overqualified for the job.

Current Personal Resources

Self-esteem Scale

Rosenberg (1965) developed a larger version of the self-esteem scale (RSE) used in this analysis. My scale employs six of Rosenberg's original ten items. Four items were removed because the Advisory Committee felt they were redundant or confusing, and in an attempt to shorten the questionnaire (see Appendix 4.2). Respondents were asked to what extent they agreed with a typical item such as, "I feel I have a number of good qualities." The items in this scale were summed and divided by six to produce a maximum score of 5 indicating high self-esteem. Avison (1995) reports that the scale has excellent measurement properties and found the index in his study had a Chronbach's

Alpha of 0.86. My scale's Chronbach's Alpha was 0.79. As is often found for this scale the mean score was high (4.3). The standard deviation was 0.59.

Mastery

Mastery measures whether individuals see themselves in control of the important forces that affect their lives (Pearlin et al., 1981). This six-item scale was adapted from Pearlin et al.'s (1981) seven-item scale. Two of the original items were removed because of redundancy and a new item was introduced (Appendix 4.2). As with other scales, some of the items were reworded for clarity and brevity (e.g., "I often feel helpless when dealing with problems."). Respondents were asked to indicate their level of agreement with each item using a Likert scale where 1 equals "Strongly Disagree" and 5 equals "Strongly Agree." The items were summed and divided by six resulting in a high score of 5 representing high mastery. Although Pearlin et al. (1981) used confirmatory factor analysis to determine scale reliability, Avison (1995) reported a Chronbach's alpha of 0.80. The Chronbach's Alpha in my analysis is 0.79. The mean score for this scale is 3.9 and the standard deviation is 0.68.

Coping

I employed two coping sub-scales, adapted from Carver (1997) who developed two items for each construct measured. However, the Advisory Committee felt this was unnecessary and suggested using one item for each construct (Appendix 4.2). The first sub-scale, *Active Coping*, looks at "adaptive" responses to stressors in an attempt to resolve stressful situations. They include positive responses that Carver refers to as active coping, positive reframing, and planning (see Appendix 4.2). *Avoidance Coping* examines behaviours that appear to be maladaptive or dysfunctional. Carver categorizes these behavioural responses as denial, substance use, venting, behavioural disengagement and self-blame. Respondents were asked to think of a particularly stressful experience that had occurred during the past month, either at home or work, and indicate how often they had engaged in each of the behaviours in the scale .

Active Coping

The statement "I took action to try to make the situation better" exemplifies the six items in the scale. Responses were based on a 5-point scale ranging from "Never" to "Most of the Time." The items were summed and divided by six for a high score of 5 indicating high active coping. Chronbach's Alpha for this scale was 0.87. The mean score was 4.0 with a standard deviation of 0.65.

Avoidance Coping

The five items in this scale have the same response categories as above. The statement, "I blamed myself for what happened" typifies items in this scale. Again, the items were summed and divided by five for a maximum score of 5 indicating high avoidance coping. Chronbach's Alpha in this scale is quite low at 0.57, perhaps because the items are conceptually dissimilar or do not indicate a particular pattern of behaviours. However, the fact that the behaviours would most likely be judged as maladaptive or dysfunctional makes them theoretically important. The mean for this scale was 2.1 and the standard deviation was 0.62.

Personal Resources at 18

As I have argued previously in Chapter 2, concepts of the self are largely determined by childhood development experiences. Personal resources are relatively entrenched by the time an individual reaches adulthood. Adlerian theory states that experiences in childhood leads to the development of a set of "lenses" through which we perceive, make sense of, and deal with the world. The two main concepts of the self that I am interested in are *Self-esteem* and *Mastery*. The enhancement and protection of these self-concepts are, according to Pearlin et al. (1981, p. 340), "the fundamental goals after which people strive."

It has been shown that self-esteem, in particular, is generally high in childhood and drops in adolescence to gradually increase in adulthood across gender, socioeconomic status and ethnic lines (Robins et al. 2002). Fonagy (1997) states that individual self-concepts, such as self-esteem and mastery, are fairly well established at the age of 18, largely as the result of early childhood experiences and relationships. I suggest that the age of 18 is a memorable point in an individual's life. At this age, young people are highly conscious of how others perceive them, and how they feel about themselves. It is the point where the individual makes the transition into adulthood. He or she has just finished high school and has developed independent ideas and plans about his or her future.

I also propose that an individual's perception of self-esteem and mastery at age 18 might serve as a baseline from which current levels of mastery, self-esteem and depressive symptoms can be predicted. As Robins et al. (2002) claim, role theories of aging suggest that as people mature they tend to occupy more positions that carry prestige and power. These positions are most likely to increase their feelings of self-worth.

Therefore, asking respondents to recall their feelings about self-esteem and mastery at the age of 18 gives us a baseline from which we can see how much their self-concepts have changed since entering the workforce and the ability to predict with some confidence how they cope with work and life stressors.

Several studies of burnout have come to the conclusion that those high in personal resources may be protected from burning out at work, while those with low levels of personal resources may be more vulnerable (Burisch 2002; Janssen et al. 1999; Kalimo et al. 2003; Nowack and Pentowski 1994; Rosse et al. 1991). These authors also suggest that looking at the antecedent effects of personal resources is important to our understanding of the work stress process and its consequences.

Ideally, an examination of the antecedent effects of personal resources would be best carried out using a longitudinal study design. Unfortunately, it was impossible to conduct this type of research in my study. To overcome the limitations of my study design, I decided to ask respondents to recall what their levels of self-esteem and mastery were when they were at the age of 18. Naturally, this leaves us with a potential problem of recall bias. However, I believe that using well constructed and widespread measurement instruments like self-esteem and mastery scales can lower the risk of recall bias. Additionally, the questions do not ask respondents to recall specific details, which we all know can be lost or otherwise altered with age. Most importantly, my recall questions ask about something very central to most 18 year old's lives, their self-concept. While they might not remember, years later, who their math teacher was, they can probably remember quite well whether they felt confident or anxious, in control of their life or very much a failure, compared to their peers.

Other research suggests that early recollections can predict later events. Birtchnell (1993) has shown, for example, that adult recollection of poor early care was associated with a number of negative factors relating to adults' ability to relate to others such as bad marriages and divorce. Vettor et al. (2000) cites Caruso and Spirrison (1994) who found a relationship between early recollections and personality functioning and coping abilities. Kern et al.'s (1996) study of female college students revealed a strong relationship between early childhood recollections based on Adlerian theory and stress coping resources. The authors conclude that good parenting promotes the child's physical and psychological well-being which is crucial in coping with stress in adulthood.

Sheerer's (1997) overview of the childhood maltreatment and adult psychological functioning literature concludes that childhood maltreatment appears to be a risk factor for adulthood psychosocial dysfunction. The studies reviewed rely on recall data, but methodological differences make for difficult comparisons. Saleptsi et al. (2004) report similar findings. In their study of adult patients in four European psychiatric hospitals, they found that patients, as opposed to non-patients, were more likely to report more negative life events during late childhood and adolescence than during early childhood and adulthood. They concede that recall may be biased but other evidence they present suggests that patients are more likely to underreport abuse histories. Hardt and Rutter's (2004) review of the validity of retrospective reports of adverse childhood experience suggests that recall bias may be more problematic if the events under question are not adequately defined. However, they find that false positive reports of childhood adversity are probably rare and "bias is not sufficiently great to invalidate retrospective case-control studies of major adversities of an easily defined kind" (p.260).

Self-Esteem at 18

Self-esteem at 18 uses the same items included in the current self-esteem scale (Rosenberg, 1965), but asks respondents to recall how they felt about themselves when they were 18 years of age. To minimize any contamination with current perceptions of self-esteem, this scale was placed at the beginning of the questionnaire. The Chronbach's Alpha for this scale is 0.79. The mean is 4.0 and the standard deviation is 0.68.

Mastery at 18

The items in the scale are the same as those included in the current mastery Scale (Pearlin et al., 1981). Again, respondents were asked to recall how they felt about themselves at the age of 18. This scale was also placed at the beginning of the questionnaire. Chronbach's Alpha for *Mastery at 18* is 0.82 and the mean is 3.7 with a standard deviation of 0.74.

Socio-Demographic Variables

Socio-demographic variables are employed in the analyses largely to control for the effects of gender or age, for example, on the variables of interest. For instance, holding gender or age constant allows us to examine associations amongst variables that could vary with gender or age. Other socio-demographic variables, such as income, eldercare, minority status, or physical disability may themselves be a source of stress. A low income might imply financial strain or having eldercare responsibilities may be a source of caregiver burden. The following socio-demographic variables have been included in the analysis.

Gender

Females were coded as 1 and males as 0.

Age

Respondents were asked, “How old are you?” and reported their age in years.

Education

Respondents were asked, “What is the highest level of education that you have completed?” Responses were coded as: (1) Less than high school.; (2) High School Diploma; (3) Some Post-Secondary Education; (4) Technical, Vocational or College Certificate/Diploma; and (5) University Degree.

Marital status

Respondents were asked: “What are your current living arrangements?” Respondents could indicate whether they were: “living with a spouse or partner;” “living alone;” or “living with others.” The responses were recoded into a binary variable where 1 equaled living with a spouse or partner and all other values were coded as 0.

Gross, Combined Household Income

This question asked “What is your current, yearly, combined household income (before taxes and deductions)?” Responses were categorized into eleven $10,000 increments ranging from less than $10,000 to more than $100,000.

Eldercare

This question asked whether or not respondents cared for an elderly parent or relative. The variable was coded 1 for yes and 0 for no.

Minority Status

Respondents were asked to answer yes or no to the question: "Do you consider yourself to be a member of a visible minority group? They were given the following definition: "Members of visible minorities are persons who are non-Caucasian in race or non-white in colour. Examples of visible minority groups are: Black, Asian, Middle-eastern etc." (Krahn and Lowe 1993). Yes responses were coded as 1 and no was coded as 0.

Physically Disabled

Respondents were asked if they considered themselves to have a physical disability that may disadvantage them in employment (Krahn and Lowe 1993). If they answered yes they were coded as 1 and no was coded as 0.

Job Characteristics and Experiences

Occupation

Occupation is an important variable to consider in my analysis. Previous research has shown that different jobs have varying degrees of decision latitude and psychological demands. Karasek et al. (1998) have demonstrated that employees in certain occupations are more prone to job strain (high psychological demands and low decision latitude). For example, they found that telephone operators and keypunchers are more likely to suffer high job strain than architects or repairmen who have high decision latitude but low psychological demands.

Respondents were asked to indicate their job classification from a list of thirteen job descriptions. Because of some small sub-sample groupings, occupations were reclassified[22] into three main categories: clerical, technical and trades, and management and professional. These broad categories are typical in the literature. Each of these categories was recoded into a binary variable, where 1 equals the particular occupational group. For example, if management and professionals were coded 1, clerical, and technical and trade workers were coded as 0.

Work full-time

Respondents were asked if their job was mainly full-time or part-time. Full-time workers were coded as 1 and part-time employees as 0.

Job Status

Respondents were also asked if their job was considered permanent or provisional. These classifications are unique to the organization surveyed and all employees are aware of their status. Permanent staff were coded as 1 and provisional employees as 0.

Victim of Discrimination[23]

I decided to include discrimination as a control variable in my study because I felt it could be an important source of workplace stress. Respondents were asked the following question: "In the past two years, have you ever been the victim of discrimination on the job?" If they answered yes they were coded as 1 and no was coded as 0. Fourteen percent of respondents said they were victims of discrimination.

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[22] Please refer to page 1 of the Questionnaire in Appendix 1 for the original classifications.

[23] Respondent's were given the following definition of discrimination as provided by Statistics Canada: **Discrimination** means to *treat someone differently or unfairly* because of a *personal characteristic* or distinction which, whether intentional or not, has an effect which *imposes disadvantages* not imposed upon others or which *withholds or limits access* to other members of society. There are eleven prohibited grounds under the Canadian Human Rights Act: *race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, family status, mental or physical disability and pardoned conviction* Health Canada. 2002. "2002 Public Service Employee Survey." Pp. 32. Ottawa: Government of Canada..

Victim of Harassment[24]

As with discrimination, I felt harassment was also an important potential source of workplace stress. Respondents who answered yes to the question: "In the past two years have you ever been the victim of harassment on the job?" were coded as 1 and those that answered no were coded as 0. Thirty-two percent of the sample reported being victims of harassment in the previous two years.

ANALYSIS STRATEGY

The next Chapter presents a number of multiple regression analyses using the variables described above. The purpose of the overall analysis is to test the stress process model and determine which variables have predictive power in explaining variation in depression. The analyses are structured in an additive fashion.

Equation 1 tests the basic Karasek job demand – control – support model, work-family interference and other work-related stressors and their relationship to depression. Equation 2 allows us to test the previous model while controlling for socio-demographic factors. In Equation 3, I again test the model controlling for socio-demographic factors as well as occupation and job status, and while also determining whether discrimination and harassment on the job exert independent stress effects. Equation 4 tests the model with all the previous variables and looks for any independent effects that current personal resources may exert on depression. Finally, in addition to all the variables already in the model, in Equation 5 I search for any independent effects of personal resources at the age of 18 on current levels of depression.

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[24] Respondent's were given the following definition of harassment as provided by Statistics Canada: **Harassment** is any *improper conduct* by an individual, that is directed at and offensive to another person or persons in the workplace, and that the individual knew or ought reasonably to have known would cause offence or harm. It comprises any *objectionable act*, *comment* or *display* that *demeans*, *belittles*, or *causes personal humiliation or embarrassment*, and *any act of intimidation or threat*. It includes harassment within the meaning of the Canadian Human Rights Act Ibid..

Equations 4 and 5 are central to my thesis. They are an attempt to answer the question: "Why is it that in the face of similar stressors some people cope while others do not?" I contend that the answer to this question lies in the role that personal resources play either directly or in buffering the effects of stressors on depression. First, I predict that current levels of personal resources can reduce the risk of suffering depressive symptoms, independent of the effects if all the other variables in my model. Second, I hypothesize that early personal resources (at age 18) will have independent partial effects on depression.

Finally, in Chapter 6, I investigate the moderating or buffering effects of self-esteem and mastery at age 18 on the stressors identified in my final, reduced model.

CHAPTER 5 – DEVELOPMENT OF MY MODEL OF THE STRESS PROCESS IN THE CONTEXT OF WORK

DEVELOPMENT OF THE REGRESSION EQUATIONS

In previous Chapters I proposed a comprehensive model of the stress process in the context of work that expands Karasek et al.'s job demand-control-support model and is based on the general model of the stress process outlined by Pearlin et al. (1981). There are three main goals in this Chapter. The first is to replicate Karasek's job demand-control-support model (Karasek et al. 1986). The second is to examine to what degree additional work stressors -work-family interference, other non-work stressors and social support impact depression levels. The third goal is to determine the impact of current personal resources and early personal resources (i.e., self-esteem and mastery at the age of 18) on depression in an attempt to begin to answer the core question in my study: why do some people cope better than others in the face of similar stressors?

I attempt to accomplish these goals by examining a series of multiple regression equations that incrementally add variables to arrive at a final trimmed equation to predict depression. It is important to note that the predictor variables are brought into the analysis in various stages on theoretical grounds, not because of their statistical relationships with the dependent variable. The first regression analysis (Equation 1) examines the effects of work/family stressors and three sources of social support on depression. These independent variables are referred to as the central variables. Subsequent regression equations add, step-by-step, conceptually similar sets of variables (i.e., socio-demographics and occupation category variables, which serve as controls, and current personal resources and coping behaviours, and early personal resources) to the initial regression, so that Equation 5 contains all possible variables of interest in the analysis. Equation 6, the trimmed regression equation, is the result of an elimination process that deletes, one by one, variables that failed to demonstrate statistical significance in previous equations. However, as I discuss below, a few variables are kept in the equation because of their theoretical importance.

Each of the multiple regression equations is preceded by a discussion (and table) of the zero-order correlations between depression and the relevant variables in the equation. A complete correlation matrix for all the variables discussed in this Chapter can be found in Appendix 2.1.

Equation 1 – Impact of Central Variables (Work/Family Stressors and Social Support) on Depression

Karasek et al.'s (1986) job demand-control-support model posits that the independent additive effects of high job strain (high demand/low control) and low support from co-workers and supervisors will increase levels of depression. In my model, I also hypothesize that the independent additive effects of high work and family stressors and low general social support will result in higher levels of depression. Given these hypotheses, my central model includes the work-related variables suggested by Karasek et al. (1986) as well as measures of work-family conflict, other work-related stressors, and general social support.

Zero-order Correlations

Zero-order correlations between the variables in the central equation and depression are presented in Table 5.1. These predictor variables are labeled (in parentheses) as either stressors or buffers. Generally, I would expect that the relationship between the stressor variables and depression should be positive. Social support variables should have a negative correlation with depression. Although a few of the correlations in Table 5.1 are very small and non-significant, the relationships are in the predicted direction.

As Table 5.1 illustrates, there are several strong correlations with depression. With respect to work stressors, experiencing job strain (r = 0.316) and working in an unpleasant physical environment (r = 0.296) exhibit the strongest correlations with feelings of depression. Perceiving that one has support from family and friends (r = -0.442), and enjoying job security (r = -0.388) and having financial security (r = -0.347) are the strongest negative correlations with depression. Life impacting on work (life to work conflict) exhibits the highest correlation coefficient with depression (r = 0.504) but, clearly, experiencing both kinds of work-family conflict are strongly associated with symptoms of depression. Working unpaid overtime and feelings of overqualification and underpayment do not have significant zero-order effects on depression.

Table 5.1 Zero-order Correlations of Central Variables with Depression

Work/Family Stressors and Social Support	**Correlations**
Job Strain (work stress)	.316*
Physical Work Environment (work stress)	.296*
Physical Job Demands (work stress)	.201*
Supervise Others (work stress)	.066
Overqualified for Job (work stress)	.041
Earn What You Deserve (work stress)	.026
Unpaid Overtime (work stress)	-.021
Life to Work Conflict (work/family stress)	.504*
Work to Life Conflict (work/family stress)	.291*
General Social Support	-.442*
Job Security	-.388*
Financial Security	-.347*
Co-Worker Social Support	-.262*
Supervisor Social Support	-.197*
Macro Level Decision Authority	-.183*
*$p \leq .05$	

Some of the predictor variables in Table 5.1 are highly correlated with each other (see Appendix 5.1 for the complete correlation matrix). In order to avoid conceptual redundancy and possible multicolinearity, I dropped macro-level decision authority since it is strongly correlated with having a supervisory role ($r = 0.517$) and is most likely measuring the same concept. For instance, supervisors are more likely than non-supervisors to have an influence on decision-making at the macro-organizational level. Moreover, the concept of decision latitude, which is already captured in the job strain interaction term, is also associated with the concept of macro-level decision-making, since managers and supervisors are more likely to engage in these levels of decision-making than other non-supervisory employees.

There is also a strong association between working at a physically demanding job and experiencing a negative physical environment (r = 0.605, see Appendix 5.1). To avoid multicolinearity, physical job demands will not be included in the regression equation. I kept the physical work environment measure because of its broader focus. Noise, for example, is one indicator of the physical work environment that can be irritating for people who work indoors and out, and is not necessarily limited to heavy machinery or large crowds of people. For instance, clerical staff may complain about the noise in their environment while they try to focus on their work when colleagues are engaged in loud conversations with others.

The high correlation between life to work conflict (the problems of family issues spilling over into the workplace) and depression might suggest that the variables are measuring the same thing (r = 0.504). However, they are conceptually quite different. Conflicts at home that spill over into the workplace affect an employee's ability to concentrate on tasks at work. On the other hand, feeling depressed is a well-established outcome of stress and captures, for example, an individual's perceptions of fatigue, irritability, and lack of motivation as well as other physiological outcomes such as sleeplessness, lack of appetite and inability to concentrate. Consequently, I retain the "Life to Work Conflict" variable as an independent variable in my central model.

Multiple Regression

Table 5.2 presents the results of the regression of depression on the central variables (Equation 1). As predicted, job strain and job security demonstrate sizeable and significant independent effects on depression. Controlling on all other variables in the equation, respondents who experienced more job strain were more depressed (Beta = 0.130). On the other hand, individuals who reported higher levels of job security felt less depressed (Beta = 0.179) when all other variables in the equation are controlled. The effect of feeling secure in one's job is stronger than that of feeling strained by one's job. This finding may be unique to my sample. As noted in Chapter four, one-third of the sample members had provisional employment status, which means their jobs were not secure. A large proportion of these workers are labourers who are subjected to seasonal lay-offs with no guarantee that they will be hired back. Some of these people have been with the organization for as long as twenty years. Moreover, approximately half of the sample reported that their career prospects were not good. This was especially the case for technical workers (results not shown here). Clearly, issues of employment security were very salient for this sample.

The moderate strength of the job strain measure provides support for Karasek et al's (1986) model. The research literature has been equivocal on the predictive power of this measure, perhaps due to variations in the way it has been constructed (see Chapter 4). So it is satisfying to see the term perform in my analysis as Karasek (1979) predicted it should.

However, it is noteworthy that the partial regression coefficient for job strain (Beta = 0.130) is considerably lower than the zero-order correlation with depression (r = 0.316). To determine why this was the case, I performed a stepwise regression analysis for all the variables in the central model (results not shown here). The results revealed an incremental decrease in job strain's predictive power with the additions of life to work conflict, general social support, job security, work to life conflict and, finally, co-worker social support. It would appear from this analysis that job strain is associated with variables not strictly related to the workplace. This finding reinforces the importance of including non-work stressors and buffers in a broader work stress model.

Experiencing work to life and or life to work conflict also have significant independent effects as predicted (Betas = .181 and .353, respectively)[25]. Sample members who reported higher levels of work to life and or life to work conflict were more likely to report symptoms of depression.

Receiving support from family and friends (general social support) and from one's colleagues reduced one's feelings of depression (Betas = -.100 and -.211, respectively). However, receiving support from one's supervisor was not significantly related to depression. Although Karasek et al. (1986) predicted that both supervisor and co-worker social support should reduce the effects of stress, my addition of general social support to the equation may have resulted in the unexpected non-significant result for supervisor support simply because general social support may be of more salience for members in this sample. When one looks at the zero-order correlations for these variables, general social support has a stronger association with depression, while the association between supervisor social support and depression is the weakest.

Other variables included in the analysis (e.g., financial security) failed to demonstrate significant effects on depression. Working unpaid overtime has a small negative, significant effect on depression even though the zero-order correlation for this variable was not significant (Table 5.1). The direction of this finding is difficult to interpret. However, the effect is small and may prove to be inconsequential in further analyses. Overall, the results of this multiple regression analysis are very impressive, explaining 49% of the variance in depression.

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[25] The differences in predictive ability are consistent with the literature (Duxbury, 2006 in conversation).

Table 5.2 Regression of Depression on Central Variables

Work/Family Stressors and Social Support	**Equation 1 (Beta)**
Job Strain	.130*
Job Security	-.179*
Financial Security (low to high)	-.064
Work to Life Conflict	.181*
Life to Work Conflict	.353*
Work Unpaid Overtime (1 = Yes)	-.088*
Physical Work Environment	.056
Supervise Others (1 = Yes)	.060
Earn What You Deserve[26] (3 = Less than deserve)	.011
Overqualified for Job (1 = Yes)	-.048
Co-worker Social Support	-.100*
Supervisor Social Support	.075
General Social Support	-.211*
N	445
Adjusted R^2	.494
* $p \leq .05$	

Equation 2 – Impact of Central and Socio-demographic Variables on Depression.

Zero-order Correlations

Table 5.3 shows the zero-order correlations between relevant socio-demographic and feelings of depression. The strongest zero-order correlations involve having a physical disability (r = 0.205), being a woman (r = -0.145) and one's household income (r

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[26] 1 = More than deserve, 2 = about the right amount, 3 = less than deserves

= -0.126). While a negative correlation between household income and depression is expected, as is the relationship with physical disability, the lower depressive symptoms reported by women is surprising.

It is generally assumed that women are at a greater risk for depression than men. However, Nazroo (2001) explored gender differences in depression and concluded that women's higher risk of depression was the result of gender differences in roles. Specifically, women were at a greater risk for depression when there was a crisis in roles that had the most salience for them, such as those that involved "children, housing and reproduction." Men, on the other hand, were at greater risk for depression when there was a crisis in the roles most salient to them, namely, finances, work and personal relationships. Torkelson and Muhonen (2003) also found that predictors of health outcomes differed for male and female managers. In their study, female managers' health was predicted by workload and work-family conflict, while male managers' health was predicted by a perceived lack of control. Following this line of reasoning, in my sample technical and trade workers, who are mostly men, are more likely than clerical workers (mainly women) or those in professional or management occupations (equally male and female) to experience depression (see Appendix 5.1 Correlations).

Consequently, overall, women in my sample report experiencing less depression.

Table 5.3 Zero-order Correlations of Socio-demographic Variables with Depression

Socio-demographic Variables	**Correlations**
Gender (1 = Female)	-.145*
Age (Years)	-.014
Education (5 categories from low to high)	-.114*
Marital Status (1=Married/Cohabiting)	-.037
Income (11 categories from low to high)	-.126*
Eldercare (1 = Yes)	.081
Visible Minority Status (1 = Yes)	.100*
Physical Disability (1 = Yes)	.205*
*p ≤ .05	

Multiple Regression

Results of the regression of depression on the central variables and the socio-demographic variables are presented in Table 5.4. It is noteworthy that none of the socio-demographic variables had significant effects, controlling on the central variables. Although they were not significant, education and gender did demonstrate the strongest effects on depression. The amount of variation explained in depression remained virtually unchanged ($R^2 = 0.497$).

However, the addition of the socio-demographic variables in Equation 2 produced some small changes to the net effects of the central variables. In fact, we observe a few suppressed effects with the Betas for job security, financial security, feeling overqualified for the job, and supervisor social support all increasing marginally, perhaps because of interacting effects of various combinations of predictors on feelings of depression.

Table 5.4 Regression of Depression on Central and Socio-demographic Variables

Work/Family Stressors and Social Support	**Equation 1 (Beta)**	**Equation 2 (Beta)**
Job Strain	.130*	.143*
Job Security	-.179*	-.196*
Financial Security	-.064	-.086*
Work to Life Conflict	.181*	.168*
Life to Work Conflict	.353*	.341*
Work Unpaid Overtime	-.088*	-.106*
Physical Work Environment	.056	.067
Supervise Others	.060	.057
Earn What You Deserve	.011	-.003
Overqualified for Job	-.048	-.073*
Co-worker Social Support	-.100*	-.090*
Supervisor Social Support	.075	.105*
General Social Support	-.211*	-.218*
Socio-Demographic Variables		
Gender (1 = Female)		-.043
Age (Years)		-.024
Education (5 categories from low to high)		.069
Marital Status (1=Married)		.038
Household Income (11 categories from low to high)		.038
Eldercare (1 = Yes)		.017
Visible Minority Status (1=Yes)		.033
Physical Disability (1= Yes)		.033
N	445	423
Adjusted R^2	.494	.497
*$P \leq .05$		

Equation 3 –Impact of Central and Socio-Demographic Variables, and Employment Characteristics and Experiences on Depression

Zero-order Correlations

Equation 3 introduces employment characteristics and personal experiences in the workplace into the regression equation. Table 5.5 displays the zero-order correlations of these additional variables with depression. The largest correlation coefficient observed was with being a victim of harassment (r = 0.190). Being a victim of harassment increases the likelihood that one will suffer depressive symptoms. Being a victim of discrimination also increases the likelihood of experiencing depression (r = 0.109). Management and professional workers reported less depression (r = -0.113) while technical workers reported more depression (r = 0.113).

Table 5.5 Zero-order Correlations of Employment Characteristics and Experiences with Depression

Employment Characteristics & Experiences	Correlations
Full-time (1 = Full-time)	.057
Job Status (1 = Permanent)	-.035
Clerical Occupations	-.010
Technical and Labourer Occupations	.113*
Management and Professional Occupations	-.113*
Victim of Discrimination (1 = Yes)	.109*
Victim of Harassment (1 = Yes)	.190*
*P $\leq$ .05	

Multiple Regression

The regression of depression on employment characteristics and experiences, in addition to all of the independent variables already discussed (Equation 3), is presented in Table 5.6. Given the inter-correlations among predictors that are not seen in Table 5.5, it is difficult to predict what will happen in the multiple regression equation. However, Table 5.6 shows that none of the employment variables have a significant net effect on depression. Adding employment characteristics and experiences to the equation produced only minor changes to the coefficients of the central variables and socio-demographic variables. Consequently, the adjusted R^2 remained virtually unchanged (R^2 = 0.492).

Table 5.6 Regression of Depression on Central Variables, Socio-demographic Variables and Employment Characteristics and Experiences

Work/Family Stressors and Social Support	**Equation 1 (Beta)**	**Equation 2 (Beta)**	**Equation 3 (Beta)**
Job Strain	.130*	.143*	.127*
Job Security	-.179*	-.196*	-.203*
Financial Strain	-.064	-.086*	-084*
Work to Life Conflict	.181*	.168*	.167*
Life to Work Conflict	.353*	.341*	.339*
Work Unpaid Overtime (1=Yes)	-.088*	-.106*	-.100*
Physical Work Environment	.056	.067	.081
Supervise Others (1 = Yes)	.060	.057	.058
Earn What You Deserve	.011	-.003	-.010
Overqualified for Job	-.048	-.073*	-.076*
Co-worker Social Support	-.100*	-.090*	-.094*
Supervisor Social Support	.075	.105*	.103*
General Social Support	-.211*	-.218*	-.217*
Socio-Demographic Variables			
Gender		-.043	-.059
Age		-.024	-.030
Education		.069	.080
Marital Status		.038	.039
Household Income		.038	.031
Eldercare		.017	.017
Visible Minority Status		.033	.033
Physical Disability		.033	.032
Employment Characteristics and Experiences			
Clerical Workers			.047
Technical Workers			.009
Work Full-time			.005
Permanent Job Status			.026
Victim of Discrimination (Yes =1)			.014
Victim of Harassment (Yes = 1)			-.008
N	445	423	423
Adjusted R^2	.494	.497	.492
*P < .05			

Equation 4 – Impact of Central Variables, Socio-Demographic Variables, Employment Characteristics and Experiences, and Personal Resources on Depression

Zero-order Correlations

Equation 4 examines the net effects of all the variables of interest discussed so far, along with current personal resources, on depression. Table 5.7 presents the zero-order correlations between depression and personal resources, both current and at the age of 18. Only the correlations for current personal resources will be discussed at this point. The correlations involving personal resources at the age of 18 will be discussed when Equation 5 is introduced in the next section.

Table 5.7 shows some strong zero-order correlations with depression, most notably that of current mastery (r = -0.591). One might be tempted to argue that the two variables are measuring the same concept. However, mastery is conceptually very different from depression. Mastery concerns the extent to which individuals see themselves as being in control of the forces that importantly affect their lives (Pearlin, et al. 1981). An individual's sense of control is associated with lower levels of depression because it allows people to avoid and solve problems actively and effectively (Mirowsky and Ross 1986). In contrast, symptoms of depression, as discussed earlier, refer to a specific set of psychological and physiological outcomes.

Similarly, there is a strong, zero-order association between depression and one's sense of self-esteem (r = -0.517). Again, like mastery, self-esteem is conceptually quite different from depression. Self-esteem is generally defined as a global self-evaluation of one's self-worth. Self-esteem measures the extent to which an individual believes that he or she is capable, significant, successful and worthy. It is argued that self-esteem has two basic components: a belief in one's ability and a belief in one's fundamental worth (Janssen et al. 1999). Also of note is the strong relationship between feelings of depression and behaviours used to avoid problems (r = 0.475). Avoidance coping is a set of specific behaviours that individuals engage in to avoid or deny the presence of problems. Therefore, the two variables are again conceptually different.

Turning to correlations among personal resource measures, there is also a strong correlation between perceptions of self-esteem and mastery (r = 0.569). Again, I have argued, as does the research literature, that these two constructs are conceptually different from one another. Appendix 5.1 reveals that the perception of personal control is also highly correlated with the support one receives from family and friends (r = 0.415) but the case has been previously made that these two variables are conceptually unique. It is further demonstrated in Appendix 5.1 that avoiding problems also has a strong zero-order association with life's problems spilling over into the workplace (r = 0.452) but, as we have discussed, the two variables bring unique properties to the equation.

In previous sections of this Chapter, I have explained why I dropped several predictor variables that were highly correlated with other independent variables. However, because of the central role that personal resources play in my theoretical model, I will work with all measures, taking steps to monitor the results for multicolinearity. Because of the strength of their zero-order correlation coefficients with depression, I expect that self-esteem, mastery, and avoidance coping will have strong predictive power in the multiple regression equation, even after controlling on all the other independent variables. Also, I expect that the addition of personal resources will result in reduced effects of some of the stressor variables.

Table 5.7 Zero-order Correlations Among Current Personal Resources, Personal Resources at Age 18 with Depression

	Depression	Self-Esteem	Mastery	Active Coping	Avoidance Coping	Self-esteem @ 18	Mastery @ 18
Depression	1						
Current Self-esteem	-.517*	1					
Current Mastery	-.591*	.569*	1				
Active Coping	-.267*	.347*	.344*	1			
Avoidance Coping	.475*	-.362*	-.375*	-.268*	1		
Self-Esteem @ 18	-.221*	.364*	.261*	.225*	-.238*	1	
Mastery @ 18	-.271*	.242*	.350*	.200*	-.232*	.652*	1
*p = ≤ .05							

Multiple Regression

Equation 4 in Table 5.8 examines the additive effects of the central variables, socio-demographic variables, employment characteristics and experiences, and current personal resources on depression. As predicted, self-esteem, mastery and avoidance coping have sizeable and significant independent effects on depression, in the expected direction. That is, when sample members report higher levels of current self-esteem and mastery, their likelihood of experiencing depression is reduced (Betas = -0.206 and –0.183, respectively). Additionally, individuals who engage in avoidance coping behaviours are more likely to suffer from depressive symptoms (Beta = 0.117). Clearly, the additive effects of personal resources have the power to expand on the explanation of the relationship between depression and work and work/family stressors. This is demonstrated by the fact that, with the addition of personal resources, the adjusted R^2 for the equation increases from .492 to .588.

As predicted, the addition of current personal resources reduced the effects of most of the stressor variables. In particular, the effect of job strain dropped from 0.127 to 0 .066 and was no longer statistically significant. The beneficial effect of job security on depression was also reduced (from Equation 3) with the addition of personal resources, although its effect (-0.156) was still of moderate strength and statistically significant. In other words, feelings of control or mastery are associated with perceptions of job security (r = 0.349). When I control for mastery and self-esteem, I find that the separate independent effects of job strain and job security on depression are reduced in size.

Feeling financially secure and having a sense of control are also correlated (r = 0.335). Again, when mastery is controlled in the equation, the beneficial effects of feeling financially secure are reduced somewhat. Table 5.8 also shows a larger drop in the partial regression coefficient for life to work conflict (Betas change from 0.339 to 0.202). It appears, when examining the correlation coefficients (Appendix 5.1), that life to work conflict is strongly associated with all of the personal resources variables (correlations range from -0.249 for active coping to 0 .452 for avoidance coping). The relationship between depressive symptoms and having life issues spilling over into the workplace is obviously a complex one that is influenced by one's sense of mastery and self-esteem and one's ability to cope with these issues. Generally, those who experience life issues interfering with work will suffer less depressive symptoms if their personal resources are high and they engage in active coping.

The addition of personal resources also reduced the effects of feeling overqualified for the job and the perception of co-worker social support to the point where these variables are no longer statistically significant. In addition, the effects of perceiving social support from one's supervisor and from one's family and friends were reduced when controlling for personal resources. However, the effects of these two variables remain statistically significant.

The addition of personal resources to Equation 4 resulted in a few minor changes to the coefficients of the socio-demographic variables.[27] As for employment characteristics and experiences, one change is noteworthy. The partial regression coefficient for being a victim of harassment increased (from -0.008 to 0.072), suggesting some kind of suppressed effect. However, while larger, this Beta was still not statistically significant.

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[27] Although the Beta for education is the same in both equations, the effect is now just barely significant.

Table 5.8 Regression of Depression on Central Variables, Socio-demographic Variables, Employment Characteristics and Experiences, and Personal Resources

Work/Family Stressors and Social Support	**Equation 1 (Beta)**	**Equation 2 (Beta)**	**Equation 3 (Beta)**	**Equation 4 (Beta)**
Job Strain	.130*	.143*	.127*	.066
Job Security	-.179*	-.196*	-.203*	-.156*
Financial Strain	-.064	-.086*	-084*	-.064
Work to Life Conflict	.181*	.168*	.167*	.170*
Life to Work Conflict	.353*	.341*	.339*	.202*
Work Unpaid Overtime	-.088*	-.106*	-.100*	-.075
Physical Work Environment	.056	.067	.081	.036
Supervise Others	.060	.057	.058	.047
Earn What You Deserve	.011	-.003	-.010	.024
Overqualified for Job	-.048	-.073*	-.076*	-.023
Co-worker Social Support	-.100*	-.090*	-.094*	-.054
Supervisor Social Support	.075	.105*	.103*	.075*
General Social Support	-.211*	-.218*	-.217*	-.109*
Socio-Demographic Variables				
Gender		-.043	-.059	-.068
Age		-.024	-.030	-.017
Education		.069	.080	.080*
Marital Status		.038	.039	.000
Household Income		.038	.031	.032
Eldercare		.017	.017	.027
Visible Minority Status		.033	.033	.026
Physical Disability		.033	.032	.027
Employment Characteristics and Experiences				
Clerical Workers			.047	.039
Technical Workers			.009	.005
Work Full-time			.005	-.015
Permanent Job Status			.026	-.002
Victim of Discrimination			.014	-.001
Victim of Harassment			-.008	.072
Current Personal Resources				
Self-esteem				-.206*
Mastery				-.183*
Active Coping				-.004
Avoidance Coping				.117*
N	445	423	423	410
Adjusted R^2	.494	.497	.492	.588
* $p \leq .05$				

Equation 5 –Impact of Central Variables, Socio-Demographic Variables, Employment Characteristics and Experiences, and Current and Age 18 Personal Resources on Depression

Zero-Order Correlations

With equation 5, I will investigate the degree to which personal resources at the age of 18 might, along with current work and work/family stressors and buffers, and current levels of personal resources, affect depression. Because current personal resources may be a result of extended job stress (and depression) rather than a cause, I examine the independent effects of personal resources at the age of 18 on depression. As I have argued, personal resources are shaped by an individual's childhood development process and are relatively well established at the age of 18. Therefore, this regression analysis tests my central argument that personal resources at the age of 18 should have some predictive power on current levels of depression by influencing one's ability to cope with present stressors.

Referring back to Table 5.7, the zero-order correlation coefficients of self-esteem and mastery at the age of 18 with depression are $r = -0.221$ and $r = -0.271$, respectively. It would appear then that one's senses of control and self-worth at the age of 18 have a moderate effect on current levels of depressive symptomatology. There is a very high correlation between self-esteem at the age of 18 and mastery at the age of 18 ($r = 0.652$). I have argued throughout this paper that self-esteem and mastery are two distinct concepts. Therefore, despite the high correlation between these two variables, theoretically it is important to try to include them both in the same regression equation.

There is, however, a risk of multicollinearity in the regression equation because of the high correlation between self-esteem and mastery at the age of 18. If multicollinearity exists, I might expect to find that each of the variables would have fairly low partial regression coefficients despite the moderate zero-order correlations with depression, and that the R^2 for the equation would not increase substantially from the previous equation (Agresti and Finlay 1986, p. 332). I might also expect that the Standard Error of the Estimate (SEE) for the total regression model would increase substantially, and that the standard errors for the partial slopes of variables already in the equation would suddenly increase when the "problematic" variables were added to the equation.

Multiple Regression

Before discussing the regression results presented in Table 5.10, it is important to address the issues raised in the previous paragraph. First, we need to see if changes in the SEE and Adjusted R^2 between Equations 4 and 5 indicate multicollinearity. Table 5.9 presents the SEE for Equations 1 to 5. If multicollinearity exists, the SEE for the model should increase in size and the Adjusted R^2 should stay relatively the same from Equation 4 to Equation 5. This is not the case.

Table 5.9 Standard Errors of the Estimate and Adjusted R^2s for the Multiple Regression Equations

	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5
SEE	.51	.51	.52	.45	.45
Adjusted R^2	.49	.50	.49	.59	.60

I conducted a final test for multicollinearity by examining the standard error of the slopes for self-esteem and mastery at the age of 18 (results not shown). First I performed a separate regression analysis of all variables in Equation 5 except for mastery at 18. In this regression the standard error of the slope for self-esteem at 18 was 0.038. I then added mastery at 18 to the regression and compared the standard error of slopes for self-esteem at 18 and found that the size of the standard error had increased only marginally from 0.038 to 0.047. I also compared the standard error of the slopes for all other variables in the two equations and found no differences. I concluded that multicollinearity was not a problem.

The addition, of the last two variables in Equation 5 reveals only minor changes in the effects of the central variables. Supervisor social support, while maintaining the same standardized coefficient (Beta) as in Equation 4, loses its statistical significance. Current self-esteem has a small increased negative effect, while current mastery has a slightly decreased negative effect.

More importantly, one's sense of self-esteem at 18 does not have a significant, independent effect on current levels of depression. However, one's sense of mastery at age 18 has a modest, significant negative effect on current depression (Beta = -0.091). Why does self-esteem at 18 appear to have no independent effect on current depression? We can only speculate about the answer. Perhaps mastery at the age of 18 is a more reliable measure than self-esteem at age 18. Previous analysis (not shown here) revealed that self-esteem at age 18 scores were more highly, positively skewed than mastery at age 18. Alternatively, perhaps mastery in early adulthood is simply a more potent long-term predictor of psychological well-being.

Table 5.10 Regression of Depression on Central Variables, Socio-Demographic Variables, Employment Characteristics and Experiences, and Current and Age 18 Personal Resources

Work/Family Stressors and Social Support	**Equation 1 (Beta)**	**Equation 2 (Beta)**	**Equation 3 (Beta)**	**Equation 4 (Beta)**	**Equation 5 (Beta)**
Job Strain	.130*	.143*	.127*	.066	.068
Job Security	-.179*	-.196*	-.203*	-.156*	-.152*
Financial Strain	-.064	-.086*	-084*	-.064	-.076
Work to Life Conflict	.181*	.168*	.167*	.170*	.158*
Life to Work Conflict	.353*	.341*	.339*	.202*	.213*
Work Unpaid Overtime	-.088*	-.106*	-.100*	-.075	-.066
Physical Work Environment	.056	.067	.081	.036	.034
Supervise Others	.060	.057	.058	.047	.036
Earn What You Deserve	.011	-.003	-.010	.024	.020
Overqualified for Job	-.048	-.073*	-.076*	-.023	-.014
Co-worker Social Support	-.100*	-.090*	-.094*	-.054	-.049
Supervisor Social Support	.075	.105*	.103*	.075*	.075
General Social Support	-.211*	-.218*	-.217*	-.109*	-.100*
Socio-Demographic Variables					
Gender		-.043	-.059	-.068	-.064
Age		-.024	-.030	-.017	-.013
Education		.069	.080	.080*	.083*
Marital Status		.038	.039	.000	-.007
Household Income		.038	.031	.032	.037
Eldercare		.017	.017	.027	.030
Visible Minority Status		.033	.033	.026	.027
Physical Disability		.033	.032	.027	.030
Employment Characteristics and Experiences					
Clerical Workers			.047	.039	.045
Technical Workers			.009	.005	.014
Work Full-time			.005	-.015	-.01
Permanent Job Status			.026	-.002	.001
Victim of Discrimination			.014	-.001	.013
Victim of Harassment			-.008	.072	.072
Personal Resources					
Self-Esteem				-.206*	-.222*
Mastery				-.183*	-.157*
Active Coping				-.004	-.004
Avoidance Coping				.117*	.113*
Personal Resources @ 18					
Self-Esteem @ 18					.070
Mastery @ 18					-.096*
N	445	437	468	410	403
Adjusted R^2	.494	.488	.474	.588	.596

Equation 6 – Trimmed Multiple Regression Equation

Multiple Regression

Table 5.11 contains my final reduced form regression equation (Equation 6). It includes only those variables that have demonstrated statistical significance in addition to any theoretically important variables (although they may not be statistically significant). For example, it was theoretically important to include job strain in the regression equation, even though this variable loses its statistical significance in Equation 4. To arrive at Equation 6, I systematically eliminated non-significant variables from Equation 5, while retaining variables of theoretical interest that were not statistically significant such as job strain, gender, victim of harassment, and self-esteem at age 18. I started the process by chopping the variable that was least significant. After inspecting the resulting equation (with one less predictor), I then dropped the next least significant variable, and so on.

My final equation demonstrates that five of the central variables do have predictive power in explaining depressive symptoms. Thus, Karasek et al's (1986) job demand, control and support model is generally supported by my regression analysis, even though not all the indicators for this model had significant effects. Experiencing job strain and feeling secure in one's job are important predictors of depression, although the net effect of job strain was not as high as I had expected. As explained earlier in this Chapter, the effect of job strain incrementally decreased with the inclusion of some of the other central variables, most notably life to work conflict.

Looking at the specific indicators in Karasek et al.'s (1986)'s model, we see that the social support measures were not very important net predictors of depression. Only general social support was still a statistically significant predictor once the many other variables were added to the analysis. These non-findings are similar to the equivocal results found in other studies (see Chapter 3).

As observed in the literature, being in a situation where work interferes with family life and family life interferes with the work is strongly related to feelings of depression. The size of the effects of these two variables in the final equation demonstrates the importance of looking beyond the workplace for predictors of depression. Moreover, because the job strain variable lost more than half of its predictive power when these variables were added to the central model, it appears they are an important enhancement of Karasek et al.'s (1986) model.

7

Controlling on all the other variables in the analysis, women were slightly less likely to report feelings of depression. This finding is opposite to what is normally observed, namely, that females tend to suffer more depression than males. However, as I argued earlier, the literature suggests that depression among women is more likely to result from stress in roles that are more salient to them, such as family roles. My study that incorporated both the work/home interface and job demands and control, found that women were more likely than men to engage in active coping (r = 0.179) and these positive coping behaviours were negatively associated with depression (r = -0.267).

This set of findings is in line with the argument made long ago by Feldberg and Glen (1979) who concluded that workplace research during the 1970s could be characterized in terms of job and gender models. Studies of male workers typically used a job model (focusing on working conditions and organizational factors) to explain men's work experiences. However, studies of female workers typically relied on a gender model which explained women's employment experiences in terms of their personal characteristics and family roles. Contemporary researchers, usually much more informed by feminist debates about women's work, have realized the importance of combining both the public and private spheres into an "intersectional" framework (Krahn, Lowe and Hughes, 2007, p. 200) to explore how other factors such as motherhood, race, and ethnicity, for example, can provide us with a more comprehensive understanding of women's paid and unpaid work experiences.

What my analysis suggests, given the unexpected finding that women report less depression than men, is that gender differences are more likely a function of workplace differences as opposed to family roles and personal characteristics. For example, women (as compared to men) in this sample report marginally more job strain but more job security, higher financial security and permanent work status, and less family to work conflict but slightly more work to life conflict. Also, although they largely occupy clerical positions, they are also more likely to be found in management or professional occupations.

Being a victim of harassment also increases the likelihood that one will suffer from depression (Equation 6). But most importantly, as hypothesized, we see evidence that personal resources reduce depression. Current self-esteem and mastery both have moderate strength negative effects on depression, other things being equal, while avoidance coping has a small positive significant net effect. Additionally, one's sense of mastery at the age of 18 also has a significant role to play in explaining the variance in depression. Equation 6, therefore, demonstrates that depression is a function of job strain, feeling secure in one's job, work/family interference, personal resources, and of one's personal development and experiences. The results of this regression seem to support the importance of adding personal resources to any analysis of the stress process.

Table 5.11 Trimmed Regression Equation on Depression

Work/Family Stressors and Social Support	**Eq. 1 (Beta)**	**Eq. 2 (Beta)**	**Eq. 3 (Beta)**	**Eq. 4 (Beta)**	**Eq. 5 (Beta)**	**Eq. 6 (Beta)**
Job Strain	.130*	.143*	.127*	.066	.068	.078*
Job Security	-.179*	-.196*	-.203*	-.156*	-.152*	-.142*
Financial Strain	-.064	-.086*	-084*	-.064	-.076	-
Work to Life Conflict	.181*	.168*	.167*	.170*	.158*	.147*
Life to Work Conflict	.353*	.341*	.339*	.202*	.213*	.247*
Work Unpaid Overtime (1=Yes)	-.088*	-.106*	-.100*	-.075	-.066	-
Physical Work Environment	.056	.067	.081	.036	.034	-
Supervise Others (1 = Yes)	.060	.057	.058	.047	.036	-
Earn What You Deserve (3 = No)	.011	-.003	-.010	.024	.020	-
Overqualified for Job (2 = Yes)	-.048	-.073*	-.076*	-.023	-.014	-
Co-worker Social Support	-.100*	-.090*	-.094*	-.054	-.049	-
Supervisor Social Support	.075	.105*	.103*	.075*	.075	-
General Social Support	-.211*	-.218*	-.217*	-.109*	-.100*	-.081*
Socio-Demographic Variables						
Gender (1 = Female)		-.043	-.059	-.068	-.064	-.071*
Age (Years)		-.024	-.030	-.017	-.013	-
Education (5 Categories low to high)		.069	.080	.080*	.083*	-
Marital Status (1 = Married)		.038	.039	.000	-.007	-
Household Income (11 categories low to high)		.038	.031	.032	.037	-
Eldercare (1 = Yes)		.017	.017	.027	.030	-
Visible Minority Status (1 = Yes)		.033	.033	.026	.027	-
Physical Disability (1 = Yes)		.033	.032	.027	.030	-
Employment Characteristics and Experiences						
Clerical Workers[28]			.047	.039	.045	-
Technical Workers			.009	.005	.014	-
Work Full-time (1 = Full-time)			.005	-.015	-.01	-
Job Status (1 = Permanent)			.026	-.002	.001	-
Victim of Discrimination (1 = Yes)			.014	-.001	.013	-
Victim of Harassment (1 = Yes)			-.008	.072	.072	.089*
Current Personal Resources						
Self-Esteem				-.206*	-.222*	-.206*
Mastery				-.183*	-.157*	-.187*
Active Coping				-.004	-.004	-
Avoidance Coping				.117*	.113*	.111*
Personal Resources @ 18						
Self-esteem @ 18					.070	.073
Mastery @ 18					-.096*	-.110*
N	445	423	423	410	403	449
Adjusted R^2	.494	.497	.492	.588	.596	.599

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[28] Management and professional occupations was the reference category

DISCUSSION

The multiple regression analyses in this Chapter were conducted to answer the question: Why is it that some individuals, in the face of similar stressors, cope better than others? I have argued that part of the answer would lie in the workplace, but that other non-work stressors would also have an impact on depression. In addition, my central argument is that the additive effects of personal resources (i.e., mastery and self-esteem), controlling for all other variables in the equation, would reduce levels of depression. Also central to my thesis is the assumption that one's sense of mastery and self-esteem are generally established by the time one reaches early adulthood, which is largely the function of the childhood development process. I measure these resources at the age of 18 to counter any possible criticism that current personal resources may be the effect of, rather than the cause of, depression. Therefore, I predicted that recollections of self-esteem and mastery at the age of 18 should have an independent effect on current levels of depression.

The results of the multiple regression analyses reveal that certain workplace stressors, such as experiencing job strain, feeling secure about one's job and being a victim of harassment, are important predictors of depression. However, I found that stressor effects were stronger in relation to work-family interference. For example, experiencing life to work conflict exerted more than three times the effect on depression than job strain when controlling for all variables in the equation. Similarly, the stressor effect of work conflicting with life was almost twice that of experiencing job strain.

Most importantly, I found that having a high sense of mastery and self-esteem were associated with lower levels of depression. These effects were more than twice that of experiencing job strain or relying on friends and family for social support. In short, having a high sense of mastery and self-esteem has greater protective power against depression than social support from family and friends. And, personal resources have greater independent effects on depression than experiencing job strain or feeling secure in one's job when all other variables in the equation are controlled. Early mastery was found to have a significant modest negative effect on depression, but the additive effects of self-esteem at the age of 18 did not.

RESULTS OF THE TESTS OF HYPOTHESES

Hypothesis 1

Several hypotheses were outlined in Chapter 3. First, I predicted that, when controlling for everything else, individuals with higher work stress would have increased levels of depression. The multivariate results support this prediction. Specifically, job strain had a modest, but significant effect (Beta = 0.078) on depression when controlling for all other variables in Equation 6. It is difficult to put the size of the effect into context given the variation in the way this concept has been measured in the past. The effect is small but this is partly because I included many additional predictors in the equation. However, I believe the construction of the interaction term used in this analysis is statistically sound and may prove to be useful in future research.

The partial coefficient for job security (Beta = -0.142) was much stronger than that of experiencing job strain. As I have argued earlier in the Chapter, this finding likely reflects the specific characteristics of my sample, as many of the respondents had provisional job status. These stressors are the most important for Karasek et al.'s (1986) model. Therefore, it would appear that these findings support the job demands – control portion of the model.

Hypothesis 2

In my second hypothesis I stated that, when controlling for all other variables in the regression, individuals with higher work-to-family conflict would experience higher levels of depression. This prediction is clearly supported by the strong net effects of the both the work to life conflict and life to work conflict variables. Overall, the results of this analysis reinforce Duxbury and Higgins' (2003) argument that role overload resulting from the work-home interface is a significant source of stress.

Hypothesis 3

Third, I hypothesized that people with higher levels of social support, independent of everything else, would have lower levels of depression. This prediction was partially supported. General social support (from family and friends) significantly reduced depression, but co-worker and supervisor social support had non-significant effects. An explanation for why I failed to find additional impacts of social support on depression is not easily forthcoming, although I would note that other studies have also found equivocal results.

Hypothesis 4

I also hypothesized that individuals who engaged in active coping behaviours would report less depression, but this prediction was not supported. On the other hand, I predicted that people who engaged in avoidant coping behaviours would report more feelings of depression, and my data supported this hypothesis. Perhaps in workplace samples like mine there is limited variability in problem-focused coping and more variability in avoidance coping, but further research would be required to follow up this hunch.

Hypothesis 5

Most important to this research is the prediction that enhanced personal resources would be associated with decreased levels of depression. This was quite convincingly supported by my regression analysis. When controlling on the other variables in the equation, the Beta for self-esteem was -0.206 while the Beta for mastery was a little lower at -0.187. While it was also predicted that both self-esteem and mastery at the age of 18 would be associated with lower levels of depression, this was hypothesis was only partly supported. Mastery at 18 demonstrated a weak but still significant effect on depression (Beta = -0.110). But the measure of self-esteem at the age of 18 did not reach statistical significance. As I speculated earlier, the non-findings for self-esteem at the age of 18 may be the result of a highly skewed distribution. Or perhaps, these two types of personal resources have different levels of potency, but my cross-sectional study cannot pursue this explanation any further.

OTHER FINDINGS

Two other important findings emerged from the analysis. First, I found that, other things being equal, women reported less depression. This is an unusual finding, but I have argued (as do other researchers) that depression among women was more likely to occur from stress in roles that are most salient to them, such as those that specifically relate to the family

Also revealing is the fact that employees who reported being a victim of harassment on the job were more likely to suffer depression than non-victims, controlling on other variables in the analysis. This is an area that has not been well explored in the literature, and based on these findings, one that merits further investigation. For example, it could be that depressed individuals are more likely to perceive harassment.

Based on Duxbury and Higgins' (2002 and 2003) work, I expected that working unpaid overtime would have a positive impact on depression. However, the effect was negative, perhaps because most of the employees who worked unpaid overtime in my sample were in management and professional occupations. These advantaged employees are more likely to have high control over their work and subsequently may experience less depression. However, it might also be due to my measurement of unpaid overtime as a dichotomous variable. Once occupational categories were added to the analysis, the significant effect of working unpaid overtime was reduced and became non-significant. However, occupational categories were themselves not significant predictors of depression. Once we control for the effect of job security, any effect of job status is negligible.

SUMMARY

My regression analyses have culminated in a model of the stress process and mental health that includes job strain, job security, general social support, work to life conflict, life to work conflict, gender, being a victim of harassment, current self-esteem and mastery, avoidance coping, and mastery at age 18 as predictors of depression. Thus, Karasek et al.'s (1986) job demand-control-support theory has been generally validated in this analysis. Furthermore, I have demonstrated that it is very important to include elements of work-family interference when researching employee mental health. Most important, the role of personal resources has been found to have strong independent predictive power in explaining work stress and its impact on depression.

As noted throughout this Chapter, my analyses to this point have focused on the additive effects of personal resources. The next Chapter investigates the moderating effects of personal resources at the age of 18 in the work stress process. Some researchers have written about the importance of investigating such moderating effects (see Chapter 3), but this is unexplored research territory. Thus, both in examining the additive effects of personal resources (Chapter 5) and the potential moderating effects (Chapter 6), this study makes a unique contribution to the stress literature.

CHAPTER 6 – MODERATING EFFECTS OF PERSONAL RESOURCES

INTRODUCTION

The central argument of my thesis is that personal resources (i.e., self-esteem and mastery) can moderate the stress process and, consequently, buffer the effects of stressors on depression. In the previous Chapter, I showed how personal resources have direct additive effects on depression, but I have not yet tested the "moderator variable" hypothesis. I theorize that personal resources are shaped and defined by the childhood development process. Thus, by the time one has reached early adulthood, one's senses of mastery and self-esteem are quite well established. In fact, I suggest that the childhood development process provides us with a lens through which we see and deal with the vagaries of life. Simply put, if the childhood development process is a positive one, the adult will likely have a positive sense of his or her self-worth and will be able to cope better with the stressors of life. On the other hand, if the experience is predominately negative, a person might not see him or herself in such a positive light and may be unable to cope well with life stressors. Hence an individual will be more vulnerable to suffering depressive symptoms.

The research literature supports the argument, mainly through longitudinal studies, that depression is typically an outcome of stressors and personal resources rather than the other way round. Although my cross-sectional study could not map the causal pathways of current stressors and personal resources on depression, I did ask about people's perceptions of their mastery and self-esteem at the age of 18. These measures could then be used to infer temporal causation in the current stress model. That is, personal resources at the age of 18 must come before and they could possibly moderate current stressors that affect current levels of depression. I demonstrated, in the final reduced form regression equation in Chapter 5, that mastery at the age of 18 has a direct, additive effect on depression (Beta = -0.110) when controlling for all other variables in the equation, although, self-esteem at the age of 18 did not reveal such an association. However, the test of the moderating effects of personal resources will be presented in this Chapter.

Recall from Chapter 5 that the stressors in the final reduced form multiple regression include job strain, job security, work to life conflict, life to work conflict, and victim of harassment. I predict that personal resources at age 18 will moderate the effects of these stressors. Specifically, in this test of an interaction (moderating) effect, I expect that the slopes for stressor variables on depression will be different depending on the level of personal resources at age 18.

METHODS

The approach I take is to split my sample into three groups on the basis of the level of personal resources at age 18. I do this first for self-esteem and then for mastery. Having separated respondents into three groups, I can then compare the net effects of stressors on depression for those who reported low, medium, and high self-esteem (or mastery) at the age of 18.[29] Since the greatest proportion of my sample (about 60%) scored high on both of these variables, while about 20% scored medium, and 20% scored low, I split the sample according to quintiles, with the first quintile in the "low" category, the second quintile in the "medium" category, and the tope three quintiles in the "high" category. Three separate multiple regression analyses of stressors on depression were then performed to test the moderating effect of self-esteem, and another three analyses did the same for mastery at the age of 18. To avoid multicollinearity issues and to enhance clarity of interpretation of causal effects, current levels of self-esteem and mastery were not included in the analysis.

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[29] Other means of testing for interaction effects, such as the use of multiplicative terms, are equally valid. To use multiplicative interaction terms in this analysis would require separate, additional regression analyses for each of the many possible two-way (or three-way) interaction terms. The method I have chosen is more efficient since it allows us to examine potential interactions with theoretically key variables all at once.

RESULTS

Self-esteem At the Age of 18

Table 6.1 presents the regression of depression on the main stressors identified in Chapter 5, for three different levels of self-esteem at age 18. Comparing slopes across the three equations, we see similar negative effects of job strain on depression in each equation. This does not indicate a moderating effect since we would have expected larger slopes for lower levels of self-esteem. Similarly there is no interaction effect for job security. In other words, no matter what a person's level of self-esteem at age 18, job strain and job security exert similar effects on depression. The moderating effect of self-esteem on the relationship between work to life conflict and depression 18 is actually in the opposite direction than predicted. I would expect to find that as levels of self-esteem at age 18 increase, experiencing work to life conflict would have less of an effect on depression. Instead the slope for work to life conflict's effect on depression increases from 0.019 in the low category to 0.133 in the high category. In contrast, the changing slopes for life to work conflict across levels of self-esteem at 18 are more or less in the expected direction. Specifically, the slope is largest for the lowest level of self-esteem at age 18. However, the differences between slopes for life to work conflict are not statistically significant.[30]

Table 6.1 does reveal a strong interaction effect between being a victim of harassment and self-esteem at 18. When self-esteem at 18 is low, being a victim of harassment has over three times the effect on depression as when self-esteem is high. The difference between the slopes (0.393 and –0.007) is statistically significant ($t = 2.86$, $p \leq .05$).

With the exception of the predicted findings for being a victim of harassment, the failure to find statistically significant interaction effects may be the result of small sub-sample sizes for the "low" and "medium" self-esteem at 18 groups. Table 6.1 shows that the standard errors of the slopes for all stressor variables are much higher under "low" and "medium" conditions than they are under "high."

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[30] The following formula was used to determine whether differences between slopes were statistically significant:

$$t = \frac{b_1 - b_2}{\sqrt{SE_1^{\,2} + SE_2^{\,2}}}$$

Table 6.1 Regression of Depression on Central Stressor Variables by Levels of Self-Esteem at 18

	---------------- Self-esteem @ 18-------------		
Variable	**Low[1] (b)**	**Med. (b)**	**High (b)**
Job Strain	.043* (.020)	.030 (.024)	.039* (.013)
Job Security	-.241* (.072)	-.250* (.076)	-.226* (.043)
Work to Life Conflict	.019 (.071)	.229* (.061)	.133* (.036)
Life to Work Conflict	.534* (.087)	.357* (.086)	.449* (.056)
Victim of Harassment	.393* (.117)	.011 (.114)	-.007 (.075)
N	100	104	282
R^2	.50	.36	.40

[1] Standard error of the slope in parentheses
* Slope is significantly different from zero ($p \leq .05$)

Given the importance of these variables to the central question of this study, I decided to probe a bit further. To attempt to overcome the problem of small sub-sample sizes and difficult to interpret results in the "medium" categories, I split the sample into two categories, "low" and "high" self-esteem at 18 based on the median scores for this variable. A comparison of low and high scores might tease out an interaction effect that was hidden by the previous three-way split. Table 6.2 shows that the standard errors of the slopes have been reduced, compared to the previous three-way analysis. It also reveals no interactions effects involving the core stressor variables but, once again, an interaction effect with being a victim of harassment. When self-esteem at 18 is low, the effect of being a victim of harassment on depression is almost double that of when early self-esteem is high (partial slopes of 0.180 and -0.007, respectively). To illustrate the differences in partial slopes for being a victim of harassment, see Figure 6.1 below. In fact, when early self-esteem is high, there is virtually no effect of being a victim of harassment on depression. The difference between slopes is significant at the .10 level.

Table 6.2 Regression of Depression on Central Stressors by Levels of Self-Esteem at 18

	------------ Self-esteem @ 18	---------
Variable	**Low (b)**	**High (b)**
Job Strain	.041* (.015)[1]	.039* (.013)
Job Security	-.254* (.053)	-.226* (.043)
Work to Life Conflict	.144* (.047)	.133* (.036)
Life to Work Conflict	.436* (.061)	.449* (.056)
Victim of Harassment	.180* (.082)	-.007✧ (.075)
N	204	281
R^2	.42	.40

[1] Standard Error of the Slope in parentheses
* Slope is significantly different from zero ($p \leq .05$)
✧ Differences between slopes is statistically significant ($p \leq .10$)[31]

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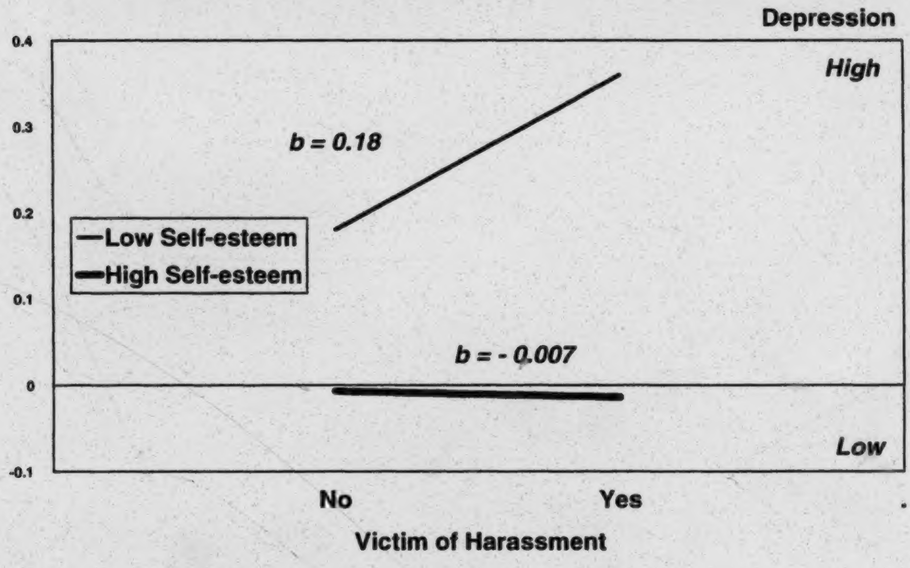
[31] I report significance levels (p) for differences between slopes in this and subsequent regressions at both the .05 and .10 levels. I am very aware of the statistical convention of identifying and then sticking with a single level of statistical significance. However, I also recognize that splitting my sample into sub-samples reduces the power of my significance tests. Furthermore, I see value in further exploring relationships in my data (by using less stringent significance tests), recognizing that further research on this topic is required to replicate my findings.

Figure 6.1 Regression of Depression on Victim of Harassment under Different Conditions of Self-esteem at Age 18 *



* Controlling on other variables in the equation (see Table 6.2)

Mastery At the Age of 18

Tests of the possible interaction effects of mastery at the age of 18 with the five main stressors are presented in Table 6.3 As I did for self-esteem at age 18, I predict reduced effects (i.e., smaller slopes) of stressors on depression for high levels of mastery. The interaction between job strain and mastery at 18 is in the expected direction (the effect of job strain decreases as mastery at 18 increases) but the difference between the slopes is not statistically significant. While not very large, differences between slopes for job security, work to life conflict, and life to work conflict are actually not in the expected direction. However, the difference in the slopes of being a victim of harassment is in the expected direction and is statistically significant ($t = 3.5$, $p \leq .01$). As we observed for self-esteem at age 18, the negative impact on depression of being a victim of harassment is reduced when mastery at age 18 was high.

Table 6.3 Regression of Depression on Central Stressors by Levels of Mastery at 18

	----------------- Mastery @ 18----------------		
Variable	**Low[1] (b)**	**Med. (b)**	**High (b)**
Job Strain	.060* (.023)	.018 (.027)	.036* (.012)
Job Security	-.330* (.082)	-.088 (.077)	-.261* (.040)
Work to Life Conflict	.063 (.070)	.101 (.069)	.147* (.034)
Life to Work Conflict	.394* (.092)	.461* (.095)	.446* (.050)
Victim of Harassment	.474* (.130)	.100 (.111)	-.044 (.069)
N	77	95	315
R^2	.59	.28	.42

[1] Standard error of the slope in parentheses

* Slope is significantly different from zero ($p \leq .05$)

Again, it is evident that sub-sample sizes are small for the "low" and "medium" conditions and some of the standard errors of the slopes are double that of those in the "high" category. Consequently, I checked to see if splitting the sample into two sub-groups rather than three might be useful.

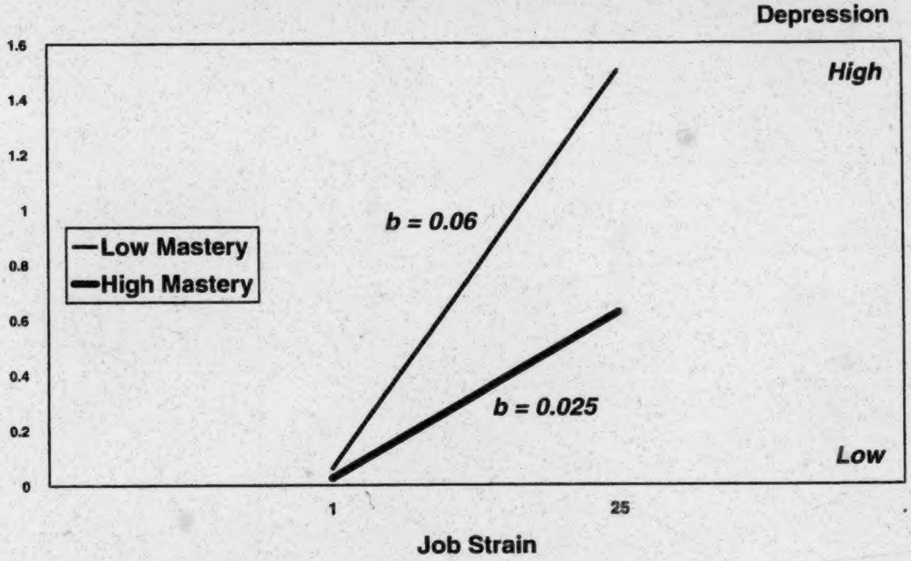
Table 6.4 examines possible interaction effects involving mastery at 18 and the core stressor variables and being a victim of harassment in the two sub-sample analysis. In the previous three-way analysis, only the difference between slopes for being a victim of harassment was statistically significant. However, this two-way analysis reveals significant interaction effects, in the predicted direction, for job strain, job security, and being a victim of harassment. A comparison of slopes for job strain reveals that this stressor had a stronger effect under low mastery conditions (slopes = 0.060 and 0.025, respectively). A t-test for the difference between these slopes was statistically significant ($t = 1.75$, $p \leq .10$). Therefore, we can say that mastery at age 18 moderates the effect of job strain on depressive symptoms. There is a similar moderating effect of mastery at age 18 on the relationship between feeling secure in one's job and depressive symptoms ($t = 1.9$, $p \leq .10$). Table 6.4 reveals that feeling secure in one's job has a much stronger negative effect when mastery at 18 was high (slope = -0.292) compared to when mastery was low (slope = -0.170). Figures 6.2, 6.3, and 6.4 illustrate the significant interactions for job strain, job security and being a victim of harassment.

Table 6.4 Regression of Depression on Central Stressors by Levels of Mastery at 18

	------------- Mastery @ 18	------------
Variable	**Low (b)**	**High (b)**
Job Strain	.060* (.016) [1]	.025*✧ (.012)
Job Security	-.170* (.049)	-.292*✧ (.042)
Work to Life Conflict	.081* (.042)	.164*✧ (.036)
Life to Work Conflict	.491* (.058)	.400* (.054)
Victim of Harassment	.214* (.079)	-.051✦ (.073)
N	245	240
R^2	.42	.45

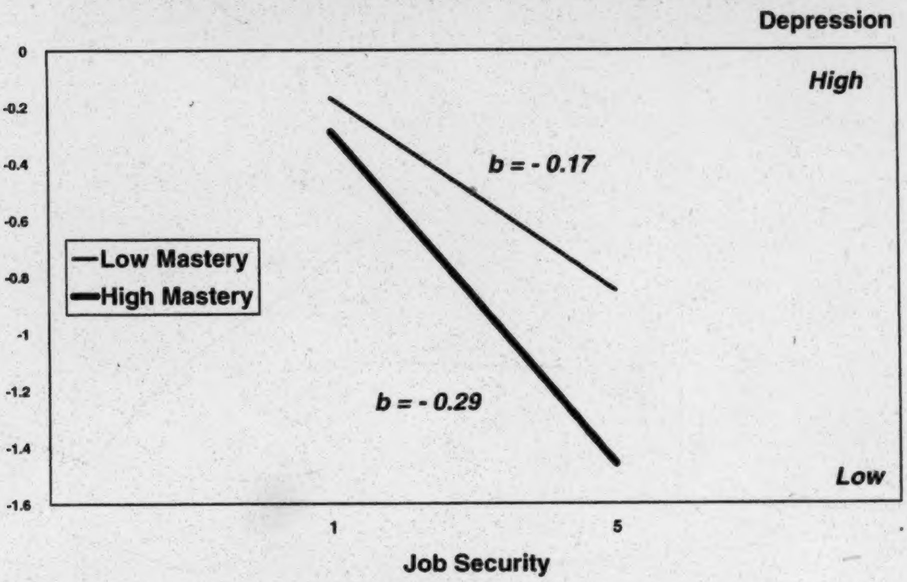
[1] Standard Error of the Slope in parentheses
*Slope is significantly different from zero ($p \leq .05$)
✦ Difference between slopes is statistically significant ($p \leq .05$)
✧ Difference between slopes is statistically significant ($p \leq .10$)

Figure 6.2 Regression of Depression on Job Strain under Different Conditions of Mastery at Age 18 *



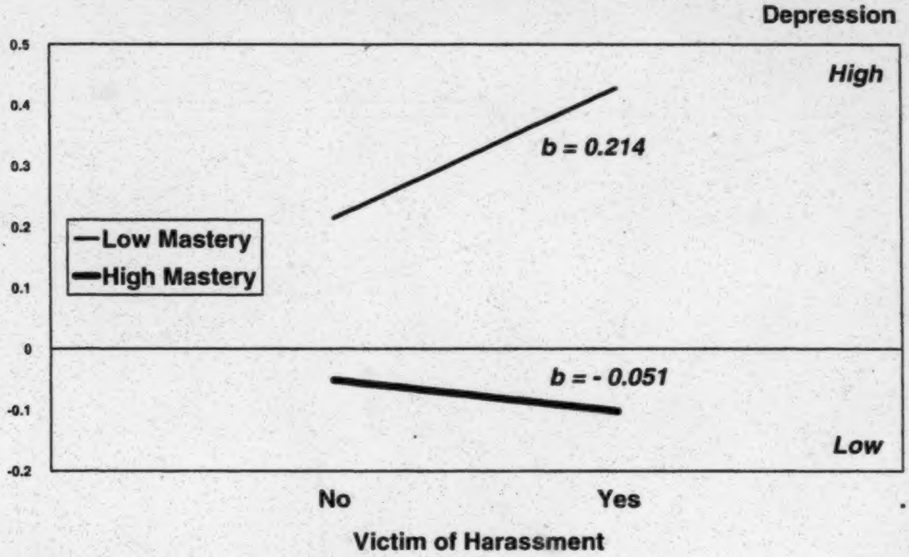
* Controlling on other variables in the equation (see Table 6.4)

Figure 6.3 Regression of Depression on Job Security under Different Conditions of Mastery at Age 18 *



* Controlling on other variables in the equation (see Table 6.4)

Figure 6.4 Regression of Depression on Victim of Harassment under Different Conditions of Mastery at Age 18 *



* Controlling on other variables in the equation (see Table 6.4)

While the t-test for differences between slopes for work to life conflict was also significant at the 0.10 level, this interaction result is not in the expected direction. I expected that under low conditions of mastery at the age of 18, the effect of work to life conflict would exert a greater effect on depression than when early mastery was high. However, the results revealed the opposite relationship. An explanation for this unusual finding is difficult to imagine. No moderating effects of mastery at age 18 were found for life to work conflict.

However, as in the previous three-group analysis, early levels of mastery moderated the relationship between being a victim of harassment and suffering depressive symptoms. Having a low sense of early mastery increased the likelihood that victims of harassment would experience higher levels of depression compared to those who reported a high level of early mastery (slopes = 0.214 and –0.051, respectively). The difference between slopes was statistically significant ($t = 2.5$, $p \leq .05$).

The results of this analysis provide a reasonable amount of support for the hypothesis that early perceptions of self-esteem and mastery do have moderating effects on particular current stressors. While both of these variables demonstrated a moderating effect for harassment at work, early mastery acted as a moderator for several additional stressor variables.

DISCUSSION

Once again, I reiterate the core question that forms the basis of my analysis: Why is it in the face of similar stressors, some people cope while others do not? I have argued that childhood experiences shape and define concepts of the self that are well established in early adulthood. I hypothesized that early personal resources could be used to predict current levels of depression. And, most importantly for the analysis performed in this Chapter, I predicted that the slopes for stressor variables would vary depending on one's early levels of personal resources. My three-group analyses (low, medium and high levels of personal resources at age 18) showed limited evidence of interaction effects involving personal resources and core stressor variables on depression. The only interaction effects I uncovered involved personal resources at 18 and being a victim of harassment. Because of small sample sizes and large standard errors of the slopes in the "low" and "medium" groups, I decided to split early personal resources into two categories, low and high. This increased the sub-sample sizes for respondents in the lower personal resources group and reduced the standard error of the slopes.

The two-group analyses identified more significant interaction effects involving mastery at age 18 than had the previous three-group analysis. T-tests of the differences between slopes revealed significant relationships in the predicted direction for job strain and job security, as well as being a victim of harassment on the job. Being a victim of harassment was the only variable found to interact with self-esteem at age 18.

Why did mastery at 18 demonstrate more moderating effects on stressors than self-esteem at 18? One reason may be that the distribution of scores for self-esteem at 18 is more positively skewed than the distribution for mastery at 18. In other words, there is less variance in self-esteem at 18 than for mastery at 18. Therefore, the former cannot, in combination with stressor variables, explain as much of the variance in depression.

In addition, one might wonder if the high correlation between mastery and self-esteem at age 18 (r = 0.652) is a factor? Are these two variables perhaps measuring the same general concept? Would we better understand the moderating effects of personal resources at age 18 on depression if we combined the two variables? Perhaps these two measures are really capturing a general sense of competency. Future research could usefully focus on this methodological question.

Another issue that arises with the use of recall data is there might be an age bias. As one gets older, does one tend to look toward their youth in a more favourable light? An examination of the correlations between age (a continuous variable) and self-esteem and mastery at age 18 suggests this is not a factor (r = -0.020 and –0.030).

Mastery at age 18 may also be a more salient variable than self-esteem at the same age in terms of what one feels he or she can do with respect to handling problems. In turn, mastery at age 18 may be more capable of moderating the effects of stress encountered later in life. Mastery is about locus of control. As such, it focuses on "whether or not outcomes are controlled by the self or by external factors" (Locke 1996, p 10). Job strain, job security, and harassment all relate to the concept of control. High job strain means low control over one's job. Low job security reflects the fact that an individual has limited control over labour market or workplace conditions. And finally, being a victim of harassment speaks to one's inability to control others' behaviour. Hence, if an individual enters early adulthood with a low sense of mastery, it is reasonable to expect that this will have an impact on his or her sense of control in future stressful situations.

Summing up, I have found support for the moderating effects of self-esteem at 18 and mastery at 18 on the effects of being a victim of harassment at work on depression. Further, my analyses show interaction effects of mastery at age 18 with job strain and job security, in terms of their effects on depression. These interaction effects suggest that the early childhood development do leave a mark on people's ability, later in life, to handle stressful situations in the workplace and the home. Personal resources such as self-esteem and mastery moderate these effects. In turn, the interaction of personal resources and stressors of various kinds affect current feelings of depression.

CHAPTER 7 – CONCLUSIONS AND IMPLICATIONS

RESEARCH GOALS AND DESIGN

The main goal of my research was to determine why some people cope more effectively than others in the face of similar work and non-work stressors. I proposed that the answer might be found in the examination of individual differences in personal resources such as self-esteem and mastery. In addition, I felt that traditional approaches to work stress might be improved if my theoretical and analytic model was expanded to include work-family interference as well as additional home and work stressors. Thus, a secondary purpose of my research was to develop as comprehensive a model as possible within which to address my central question about the role of personal resources in moderating the effects of work stressors.

Following Pearlin et al. (1981), my theoretical model positioned work stress as part of an overall stress process including sources of stress, mediators or moderators of stress, and stress outcomes. Pearlin et al. (1981) felt it was important to look beyond the immediate sources of stress, and to include broader social structural conditions of life in the analysis. In addition, I felt that it was critically important to take into account the personal resources one brings with them into the workplace. Consequently, in Chapter 2, I argued that Adlerian developmental psychology theory explains how early childhood experiences set the stage for the emergence of adult concepts of the self and provide the lens through which adults make sense of their experiences and the world in general. Since it is generally accepted that one's sense of self-esteem and mastery are largely established in early adulthood, I proposed to examine if and how personal resources in early adulthood might moderate the effects of work and other stressors on depression.

In Chapter 3, I explained why I chose to use Karasek et al.'s (1986) job demand-control-support model as the work stress component of my model. Karasek's model focuses on the social structural conditions of work and how solutions to the problems of work stress must take into account psychosocial stressors inherent in the workplace. In other words, Karasek et al.'s model suggests that work organizations need to look at their own structures as sources of, and solutions to, outcomes related to work stress in contrast to models that focus mainly on workers' ability to adapt to their work environment.

The general demand-control-support model has been widely used in work stress research. However, researchers who have used the model have frequently modified it to the extent that it is almost impossible to compare research results. Therefore, to truly test the merits of the demand-control-support model, I chose to replicate Karasek et al.'s (1986) original formulation of the model. Also, following the lead of many other work stress researchers, I chose to use depression as the dependent variable in my analysis.

The data for my study were obtained from a cross-sectional survey of employees in a large, municipal government department in a western Canadian city. All department employees were invited to participate in the study and received a self-administered questionnaire. The overall response rate was 60% (N = 561).

MAJOR FINDINGS

Replication of the Demand-Control-Support Model

My data analyses partially supported Karasek's et al's. (1986) job demand-control-support (DCS) model. Considering all the workplace stressors in my analysis, job security was the strongest predictor of depression in my test of the DCS model. This is understandable given that the department under study had gone through a recent major restructuring and that over one-third of the study participants held provisional employment status.

I believe that my more carefully and clearly constructed measure of job strain is an important contribution to the job stress research literature. Job strain has been measured many different ways in the past, and this lack of consistency in measurement has probably had an effect on the predictive power of this important concept. I felt that it was important to develop a simpler and more effective measure that contains an easily interpretable range of scores. The measurement approach presented in this dissertation may assist future researchers

The DCS model proposes that social support from one's colleagues or supervisors would act to reduce depression resulting from stress. I also argued in Chapter 3 that it was important to examine other sources of support and so added social support from family and friends to my model. Social support from colleagues had a significant, but moderate effect in my preliminary analysis. But once I introduced all the variables in my extended model, the effect of this variable became non-significant. In contrast, general social support maintained statistical significance in the final reduced form equation, thus reinforcing Sargent and Terry's (2000) contention that the range of sources of social support needs to be taken into account when studying workplace stress.

My analysis also supports much of the recent work stress literature suggesting that work-family interference has an important impact on depression. In fact, my results showed that life to work conflict had the largest net effect on depression. Work life conflict also played a major role. Another finding relevant to workplace health was the significant net effect of being a victim of harassment. Even though there is, to my knowledge, no mention of harassment in the work stress literature, this is an important finding that deserves future attention.

Addition of Personal Resources to the Model

The most important findings of my research showed the central role that personal resources play with respect to the relationship between stressors and depression. My multiple regression analyses revealed that when self-esteem, mastery and coping were introduced as additional predictors, the negative effects of virtually all of the stressors already in the model were reduced. In addition, the positive effect of social support was also reduced. Current self-esteem and mastery were found to have sizeable, independent additive effects on depression. Clearly, self-esteem and mastery are important contributors to the complex relationship between stress and depression.

The other type of personal resource I considered in this analysis was coping. I made a distinction between active and avoidant coping behaviours. I predicted that active coping would decrease levels of depression, while avoidance coping would have a positive effect on of depression. In my analysis, avoidance coping was shown to have a moderate, independent effect on depression, but active coping had no effect. Even so, I believe the case can be made for incorporating both types of coping behaviours into models of workplace stress. The effects of active coping, where one is actively engaged in solving problems, may be picked up by the inclusion of mastery in my model.

Acknowledging that current personal resources might be seen as an outcome rather than a determinant of depression, I also asked respondents to assess their personal resources when they were 18 years of age. Following my discussion of Adlerian theory in Chapter 2, I hypothesized that personal resources at age 18 could also influence current levels of depression. When recall measures of mastery and self-esteem at age 18 were introduced to my multiple regression analysis, a small but statistically significant effect of mastery at 18 on depression was observed, controlling on the effects of all other variables in the equation. This finding supports my theoretical claim that concepts of the self, shaped during childhood, can have an influence on mental health later in life.

Evidence of the direct effects of personal resources on depression, controlling on the wide range of stressors and social support measures in my model, is an important and unique contribution to the work stress literature. Even more important is the evidence of the moderating effects of personal resources on the effects of workplace and other stressors on depression. Specifically, a significant interaction effect was found between self-esteem at 18 and being a victim of harassment. Individuals with low self-esteem in early adulthood, who experience harassment in the workplace, are more likely to suffer depressive symptoms. In addition I identified a number of interaction effects involving mastery at age 18 and various stressors. The combination of low levels of mastery with high job strain, low job security and high work to life conflict resulted in a greater likelihood of higher depression scores. These are unique and, I believe, fascinating findings that significantly enhance our understanding of work stress.

Summary of Findings

Summing up, I have argued that it is necessary to look beyond the workplace to answer the question of why, in the face of similar stressors, some people cope while others do not. I proposed a more comprehensive model of the workplace stress process that builds on earlier models of work stress and adds measures of work-family interference, additional work and non-work stressors, three sources of social support, and, most importantly, personal resources. My findings showed that the demand-control (job strain) and job security components of Karasek et al.'s (1986) model had significant direct effects on depression. In addition, I developed a new way of measuring job strain that is less cumbersome to construct than previous measures and produces easily interpretable results. Moreover, work-family interference, being a victim of harassment, and gender also help us understand the complex relationship between stress and depression. Most importantly, I have demonstrated through my regression analyses that the addition of personal resources to the central model substantially increases the explained variance in depression. Furthermore, and perhaps most uniquely, I have demonstrated that self-esteem and mastery at the age of 18 can moderate the effects of various stressor variables on depression.

IMPLICATIONS FOR FUTURE RESEARCH

The results of my analysis speak to the importance of using a more comprehensive approach to the study of stress. Most importantly, future studies should include measures of self-esteem and mastery alongside indicators of workplace stress, work-family interference, and social support. In addition, I recommend that future researchers employ standardized measures, particularly my construction of Karasek et al.'s (1986) job strain interaction term, to allow more comparison of findings across studies. This job strain interaction term is easily constructed and scores are easily interpretable.

Given ongoing trends of downsizing, restructuring, and outsourcing by North American employers, the concept of job security needs to be explored further. For instance, the focus of two Canadian labour disputes that occurred this past year, the strike by Telus workers in Alberta and B.C. and the national lockout of CBC workers, was mainly about job security in the workplace. As I discussed in Chapter 4, the importance of job security, as a major component of the precarious employment literature, has important implications for the subjective physical and psychological health of workers. However, more measures of this concept would help to flesh out the relationship between precarious employment and mental health outcomes. Such measures might include career prospects, threat of lay-off or being laid off, limited-term contractual employment arrangements, employee perceptions of organizational fairness and of underemployment and pay inequities, and employees' commitment to the organization, and their intentions to quit.

There are also other research questions that might be considered that flow out of the most original part of my analysis. For example, are there other interaction effects between stressors and social support? Do *current* personal resources interact with stressors to affect mental health outcomes? Furthermore, are there additional stressors that should be explored such as organizational practices (e.g., encouraging employees to work through their lunch hour) that favour the organization at the expense of employee wellness? Could my model be used to explore other individual health outcomes such as sickness-related absence, or social outcomes, such as divorce or time spent volunteering? Although my model considered minority status, does it have cross-cultural relevance? Would my model be as useful in other types of organizations (e.g., the private sector)?

I attempted to use recall data to identify causal pathways. Based on my findings a confirmatory longitudinal study would be encouraged. For example, it would be very useful to examine baseline measures (time 1) of personal resources, social support and depression, and compare them to the same measures at a future point in time (time 2) in relation to stressor variables. An analysis like this could show much more clearly than my cross-sectional study whether stressors erode personal resources at time 2. It could also demonstrate whether baseline levels of depression and social support have an impact on the perception of work stress at time 2.

A number of other important theoretical considerations are suggested by my research. What, for example, is the relationship between a work organization's portrayal of its mission and value statements and employees' perceptions of how these statements are executed in the workplace? Do management actions "talk the talk, but not walk the walk?" In other words, do employees perceive discrepancies between publicized organizational values and their experiences in the organization? Are such perceived discrepancies linked to employee distrust or cynicism? How does this affect employee perception of fairness, commitment and loyalty to the organization? How does this affect working relationships, especially with co-workers and supervisors? Most importantly, do such perceptions contribute to workplace stress and, in time, to higher levels of depression and other negative outcomes?

The measure of coping I used in my analysis was created by asking respondents to recall stressful experiences either at home or at work and how they responded to these stressful experiences. Future research might usefully consider examining separately how people cope with stressors at work and at home. One might hypothesize that employees would engage in different coping behaviours at home and at work.

I also think that much could be learned from further research that replicated my model of the stress process across different work organizations, perhaps in different industrial sectors. Would we find, for example, different results in terms of job demands and control if we compared client-centered (e.g., hospital) versus non-client centered (e.g., oil refinery) organizations? I would think that the demands of a client-centred organization may result in greater feelings of depression.

Although my measures of childcare were not reliable, future studies would benefit from incorporating a more reliable measure of this concept into their models of the stress process. Childcare is a very important part of people's lives and an important dimension to the stress process that needs to be investigated.

Although my analysis relies on the theoretical work of Pearlin et al. (1981) and Karasek et al. (1986), could other theories, such as role conflict theory, conflict theory, or symbolic interactionism enhance our understanding of the relationship between stress and mental health?

RECOMMENDATIONS FOR INTERVENTIONS ARISING FROM THE STUDY

The specific findings of this dissertation have a number of important implications for work organizations. Job strain is a composite measure of psychological job demands and control over one's work. To reduce job strain, therefore, an organization needs to reduce the psychological demands such as the pace of work, the hours of work (i.e., overtime), and the amount of work, and increase the appropriateness and clarity of work roles. To reduce job demands, individuals need to be able to feel comfortable in saying "no" to excessive demands. At the same time, organizations need to discourage managers and supervisors from making excessive demands on their employees. Unfortunately, this requires a fundamental shift in the value organizations place on the need for higher productivity at minimal cost.

In addition, individuals need to feel more empowered in their jobs, should be able to participate in decision-making at the work group and organizational level, and should have the opportunity to grow and be creative on the job. Again, this implies that organizations need to value employee participation in the decision-making process. Also, employers need to provide employees with meaningful work that utilizes their skills and creativity.

We have seen that feeling secure with one's job has a major influence over one's mental health. To ensure that people feel their jobs are secure, they need to be engaged in activities that promote their career development and upgrade their skills. Employers need to show they are committed to their workers by creating more permanent positions and not relying on "contracting out."

Work-life conflict is of major concern. Employers need to recognize that people most likely do not wish to sacrifice one for the other. Therefore, it is important to understand that all families go through difficulties that are simply beyond their control and the organization needs to be flexible in times of family crises. Work to life conflict can be resolved partly by reducing job demands and increasing job security. Life to work conflict, on the other hand, requires flexibility in the workplace and, perhaps, some form of assistance depending on the home situation. For example, individuals encountering a temporary difficulty at home might benefit from an unpaid leave of absence or more flexible work arrangements, or be given the opportunity to job share. Whatever the case, the response needs to be individualized so it is appropriate for each set of circumstances. In other words, employers and employees should work together to find a solution that both can live with.

For those who are victims of harassment, the organization needs to acknowledge the problem and take it seriously. Depending on the source and type of harassment, appropriate courses of action need to be taken. For example, if the source of harassment were from one's colleagues or supervisor, education or training programs to increase awareness and sensitivity would best serve these individuals.

Turning to the most unique finding in my study, the effects of personal resources on the stress-depression equation, to boost confidence and self-worth for employees with low self-esteem requires a careful examination of working relationships. For instance, an intolerant or over-demanding supervisor who belittles employees (and in doing so, attacks their self-esteem) might benefit from some sensitivity or awareness training.

Similarly, work organizations that do not offer opportunities for employees to engage in decision-making and problem-solving need to recognize that such a work environment could, in time, reduce the sense of mastery felt by employees. This, in turn, could increase the risk of workers not being able to handle stressful working conditions.

An important caveat must be issued here. The findings that personal resources (either current or at the age of 18) have predictive power for depression and can also moderate the effects of other stressors could be misused by managers/employers. For example, cost-conscious employers could try to identify and filter out vulnerable employees before they become too stressed. This is obviously not something I would recommend. Rather, I believe that it is incumbent upon employers to assist vulnerable individuals to build up their levels of personal resources, first by acknowledging the value of these employees and, second, by providing them with access to resources that will enable them to enhance their self-esteem and mastery.

People with a low sense of mastery need to increase their internal sense of control. As already noted, jobs with little or no control may erode one's sense of mastery. Repetitive work or work that underutilizes an employee's skills can diminish one's sense of control. As Krahn and Lowe (2002, pp 452-454) argue, the "long arm of the job" (Meissner 1971) can have long-term negative or positive effects on workers. To change such a situation, an employer could, for example, re-evaluate an employee's qualifications and reassign her or him to more appropriate work. Similarly, conflicting work and home demands could leave a person in a sense of despair. The organization could help by limiting work demands or making arrangements to enable the person to resolve home issues.

Perhaps the most crucial point about self-esteem and mastery is that the realm of work is one of the most importance sources of feelings of self-worth and control a person can encounter (Locke et al. 1996). Having meaningful work, being allowed to use creative and problem-solving skills, and being actively involved in decision making enhances concepts of the self. Individuals high in self-esteem and mastery cope better with stress, perform better and are more productive on the job.

For those individuals who are having a difficult time coping and tend to use avoidant coping behaviours, programs that address stress management and time management issues might be helpful. Employee assistance programs that offer psychological counseling would be particularly valuable. Equally important for all of these situations is a supportive working environment. In my analyses, I found that general social support led to less depression in spite of the effects of work and home stress. Hence, organizations need to pay more attention to promoting a supportive work environment by encouraging supervisors and co-workers to be more supportive of each other. This requires that senior management must promote the idea of a supportive organizational culture. Supportive behaviours must be encouraged and rewarded. The organization must be *seen* to be supportive and receptive to the needs of its employees if it wishes to retain and attract the best people possible.

BEST PRACTICES FOR DEVELOPING HEALTHIER WORK ORGANIZATIONS

Based on their extensive research on of work-life conflict, Duxbury and Higgins (2003, p. 13) suggest a number of additional organizational strategies that I wholly endorse that could go some way to achieving greater work-life balance and, in turn, reducing work-related stress and its negative mental health outcomes. They include: decreasing workloads and making more realistic demands on employees, for example, reducing time spent in job-related travel; hiring more employees to reduce the heavy reliance on unpaid overtime; relying less on precarious employment arrangements; changing accountability and reward structures, for instance, changing the focus from output rather than hours and rewarding supportive managers who demonstrate respect for employees and supports career development (Duxbury and Higgins, 2001, p. 55); encouraging alternative work arrangements, such as workplace flexibility (e.g. when and where to work)(Duxbury and Higgins, 2001, p. 54); providing a limited number of paid leave days especially for those who have dependent children, caregiver responsibilities or personal problems; offering childcare or eldercare referral services; measuring the effectiveness of supportive policies; and rewarding demonstrations of best practices.

RECOMMENDATIONS FOR GOVERNMENT LEGISLATION

Again, because of their extensive research on work-life conflict, Duxbury and Higgins (2003, p. 14) make several important recommendations for legislators, the goal being to reduce work-life conflict. Specifically, they suggest the following legislation should be implemented: management should not require employees to work overtime except in emergency situations; employees should have the right to take time off in lieu of overtime pay; employees have the right to five days of paid personal leave per year; and policies need to be developed that allow for unpaid long-term leave to care for an elderly dependent. Further, dependent care legislation must be developed and support provided to assist people with childcare and eldercare issues, and also to reduce the "financial penalties" that comes with parenthood. Government needs to increase public awareness of how social roles and responsibilities have changed and what is needed to address those changes. Finally, governments should "lead by example" by implementing policies that make flexible work arrangements available and accessible.

These recommendations speak to the structural changes that need to take place in order for employees to balance their roles and responsibilities at work, at home, in the community and society in general. As this study has shown, structural conditions, from early childhood development to work organization management practices, impact on individual physical and mental health, family functioning, and ultimately society at large. As a result, changes in structural conditions need to be made to minimize these negative impacts.

LIMITATIONS OF THE STUDY

There are several limitations to my research that need to be acknowledged. First my study design was cross-sectional. Cross-sectional studies inhibit any definitive identification of causal patterns. Consequently, while I have described my results in causal terms, I recognize that these causal patterns have been inferred from cross-sectional data. While a longitudinal design would have been ideal for this study, time constraints made it impossible.

The issue of generalizability of results may be hampered by the limited nature (public service sector) of my sample. Also a larger sample size might result in a wider range of educational levels and ultimately a less skewed distribution of self-esteem scores. Future studies would benefit from a much larger sample using a cross-section of workers not necessarily limited to the public service sector. Again, time constraints prohibited this kind of study.

The use of self-report and recall data may be subject to recall bias. It is difficult to know if there was any recall bias in my study, but it is noteworthy that the scores on the personal resources at 18 measures were lower than that of current personal resources measures. This was expected since previous research has noted that feelings of self-esteem and mastery tend to increase over time. Additionally, I took a number of steps to minimize the risk of recall bias. The use of well-established, validated scales to measure self-esteem and mastery at both time points helps to minimize these problems. Measures that asked respondents to recall how they felt about themselves at the age of 18 were placed at the front of the questionnaire so they could not be influenced by questions about current personal resources. Additionally, the recall measures employed in this study were of a very general nature and did not ask about specific situations or experiences, which makes them less vulnerable to memory distortion. While, the positively skewed distribution of scores for self-esteem at 18 may be the result of recall bias, it could also be the result of a well-educated, self-confident sample. As suggested above, a larger and more diverse sample size would incorporate a wider range of educational levels and ultimately generate a less skewed distribution of self-esteem scores.

Despite these limitations I am confident that the findings presented here demonstrate the value of examining the psychosocial nature of workplace and home/interface issues when studying work stress. Most importantly, this research has presented credible evidence of the importance of understanding and incorporating personal resources in any study of work stress and its relationship to depression.

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APPENDIX 1.1

GLOSSARY

Active Coping (Problem-Solving Coping) – Active coping in this study incorporates three dimensions: active coping, planning, and positive reframing. Active coping is taking steps or making an effort to do something about the situation. Planning involves thinking about what strategies to take to deal with the situation. Positive reframing tries to find something good in the situation – to see it as a challenge to overcome and learn from (Carver 1997, p. 96).

Avoidance Coping – There are five dimensions to this concept: denial (refusing to believe it happened; venting (expressing negative feelings); substance use (using alcohol or drugs to cope); behavioural disengagement (giving up trying to deal with it); and self-blame (blaming one's self for what happened) (Carver 1997, p. 96).

Burnout - Burnout is an individual stress experience that is embedded in the context of complex social relationships at work. In addition to the draining of one's energy, (exhaustion - being emotionally overextended and exhausted by one's work, burnout also involves the negative evaluation of oneself (diminished personal accomplishment) and of others (depersonalization) [Maslach, 1986 #202]. Most notably, burnout is positively associated with work overload, lack of social support from colleagues and supervisors, and role problems (Janssen, Schaufeli et al. 1999).

Caregiver strain – Strain occurs when the time spent in childcare, eldercare, and care of a disabled dependent, interferes with the amount of time one needs to spend fulfilling other responsibilities.

Chronic Strains - Chronic strains are the more enduring problems, conflicts, and threats that many people experience in their daily lives [Pearlin, 1989 #283]. Many severe strains are found in major roles such as employee, spouse, and parent. Other strains cut across roles such as chronic illness, poverty or ethnicity. It is the pervasive and ongoing conditions in many people's lives that predict levels of depression.

Co-worker Social Support – this measures speaks to the degree employees feel their co-workers are competent in their jobs; take a personal interest in them; expose them to hostility or conflict; are friendly; encourage each other; and help to get the job done.

Depression – Depression is a type of mental disorder that is largely marked by alterations in mood and a lack of interest in previously enjoyed activities (Gabriel and Liimatainen 2000, p. 10). Physical symptoms include changes in appetite, sleeping patterns, ability to concentrate, plus symptoms of mental and physical fatigue and an overall sense of hopelessness.

Emotion-focused Coping – There are two types of emotion-focused coping. The first seeks social support for sympathy and understanding. The other focuses on the venting and expression of emotions (Sigmon et al. 1995).

Family Interferes with Work (Life to Work Conflict) – This type of role interference occurs when family demands and responsibilities make it more difficult to fulfill work role responsibilities (Duxbury and Higgins 2001, p. 2)

Financial Strain/Security- Ongoing financial difficulties are a major source of stress for some people. This variable measures how difficult it is to make certain financial commitments each month.

General Social Support

Social support leads an individual to believe that he or she is cared for, loved, esteemed, and valued, and belongs to a network of communication and mutual obligations. From these relationships the individual receives the emotional, cognitive and material supports necessary to overcome stressful experiences [Werner-Leonard, 1991 #336]. High levels of psychological demands and low social support at work have been prospectively related to higher levels of psychological disorder. On the other hand social support in domestic, non-work settings has been found to be protective of psychological health. This measures looks at perceived support from family, colleagues and friends

Mastery - Mastery concerns the extent to which individuals see themselves as being in control of the forces that Importantly affect their lives (Pearlin et al 1981). Mastery is the sense of personal control over events. It acts as a personal coping mechanism or resource. The sense of control shapes perceived control and is associated with lower levels of depression because it allows people to avoid and solve problems actively and effectively [Mirowsky, 1990 #346].

Problem-Solving Coping – See Active Coping

Self-esteem - Self-esteem is generally defined as a global self-evaluation. It expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes the self to be capable, significant, successful and worthy. Self-esteem is assumed to comprise two components: a belief in one's ability and a belief in one's fundamental worth (Janssen, Schaufeli et al. 1999).

Supervisor Social Support – This concept measures specific attributes of one's supervisor that are concerned with how much an employee feels that his or her supervisor cares about his or her employees welfare; pays attention to what employees say; exposes employees to hostility or conflict, helps to get the job done and gets people to work together; and provides useful feed back to employees.

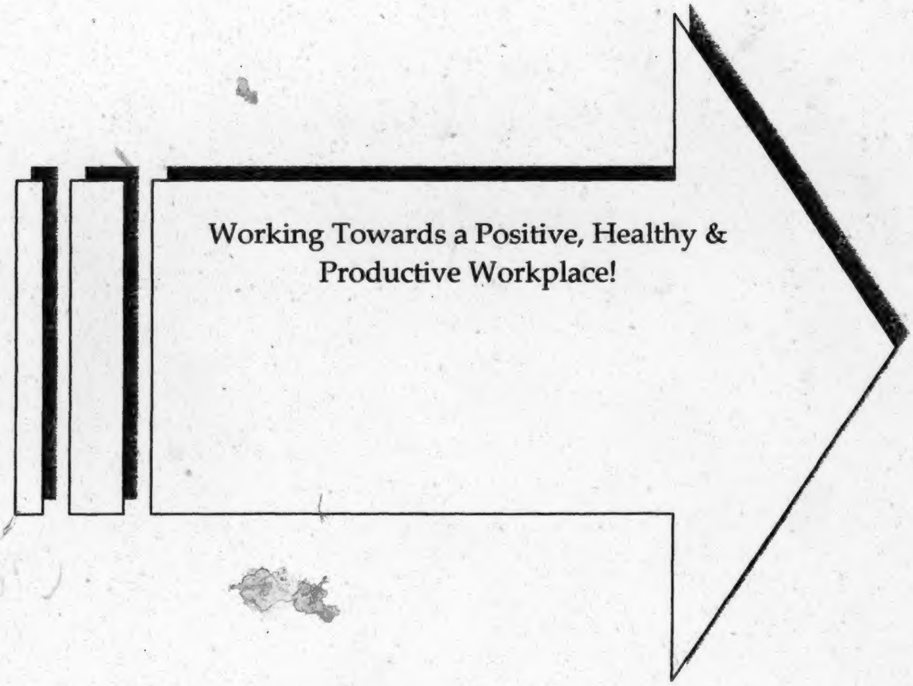
Work-Life Conflict – Work-life conflict occurs when time and energy demands imposed by our many roles become incompatible with one another; participation in one role is made increasingly difficult by participation in another (Duxbury and Higgins 2001, p. vi)

Work Interferes with Family (Work to Life Conflict) – This type of role interference occurs when work demands and responsibilities make it more difficult to fulfill family role responsibilities (Duxbury and Higgins 2001, p. 2)

Work Stressors - Stressors are challenges or threats to an individual that demand a change in one's thinking or behaviour. Measures of work stress include role stressors (load, insufficiency, conflict ambiguity, and responsibility), as well as stress due to the physical environment. Enduring work stressors (i.e., conflicts that are left unresolved) lead to certain physical and emotional manifestations that are known as stress. Stressful working conditions are associated with increased absenteeism, tardiness and intentions by workers to quit their jobs

APPENDIX 4.1 – THE QUESTIONNAIRE

WORKERS' WELLNESS SURVEY



Working Towards a Positive, Healthy & Productive Workplace!

NAME OF MUNICIPAL DEPARTMENT
September 30th, 2003

DEPARTMENT **LOGO**	***UNION 1*** **LOGO**	***UNION 2*** **LOGO**	**UNIVERSITY OF ALBERTA LOGO**

Workers' Wellness Survey

Thank you for participating in this study. **Do not sign your name.** The information you provide in the survey will remain anonymous. Your honesty in answering these questions is very much appreciated.

INSTRUCTIONS: Circle the number next to the most appropriate answer or write your answer in the space provided.

First, I would like to ask you some questions about your **current job**.

1. What is your job classification? Please circle **one** answer only.

Clerical

Office Worker (e.g., Secretary, Executive Assistant, Receptionist, Administrative Support)........1

Customer Service (e.g., Facility Attendant, Booking, Cashier)........2

Technical

Recreation Facilities, Housing & Construction (e.g., Zoo Attendant, Lifeguard, Interpreter, Instructor, Programmer, Safety Officer, Project Officer, Building Inspector, Program Leader)........3

Technical Support (e.g., Equipment Operator, Technician, Technologist, Technical Assistant, Historical Worker, Consultant, Yardman)
........4

Trades

Skilled Trades (e.g., Carpenter, Grower, Nurseryman, Pest Control Operator, Pruner)........5

Labourer........6

Professional

Social Services (e.g. Social Worker, Children Services Consultant, Community Service Worker)........7

Community Recreation Coordinator........8

Other Professional Staff (e.g., Archivist, Museologist, Facility Foreman, Landscape Architect, Planner, Project Manager, Recreation Officer, Analyst, Public Information Officer)........9

Supervision & Administration

Manager (e.g., General Manager, Director)..10
Management
Supervisor..11
Union Supervisor (e.g., Crew Leader, Team Leader,
Foreman)..12
Other (please
specify)____13

If you are uncertain about your job classification, please call [redacted] at [redacted] or [redacted] at [redacted]

2. Is your job mainly:

Full-time……………………………………………………1

Part-time ……………………………………………………2

3. Is your job:

Permanent……………………………………………………1

Provisional ……………………………………………………2

Temporary/Casual……………………………………………3

3. How many hours, on average, do you work at your job **per week**?

A. **Regular, paid** hours:	B. **Overtime, paid** hours:	C. **Unpaid** hours:
Hours____________	Hours_____________	Hours_______________

4. How many years have you worked for *Municipal department*?

Number of Years: _________________ (Write "less than one year" if this is the case)

5. Since starting work for *Municipal Department*, have you received any promotions?

No..…………………… 1

Yes…………………….. 2

6. **During the past year**, have you been laterally transferred (at the same level) to another job or section in *Municipal Department*? Circle only **one** answer.

No 1

Yes, I made the choice myself 2

Yes, I was required to move 3

7. Do you supervise or direct the work of other employees?

No .... 1 ⇨**Skip to question 10**

Yes 2

8. How many employees do you supervise or direct on average?

Number of employees ____________________

Don't know 999

9. Given your education, experience and responsibilities in your current job, do you feel you are earning:

More than you deserve 1

About the right amount 2

Less than you deserve 3

10. Given your education, experience and responsibilities in your current job, do you feel that you are overqualified for your current job?

No.......................................1

Yes 2

11. Are you a member of a union or employee association? Circle ***one*** answer only.

No ....1 ⇨**Skip to question 15 on page 4**

Yes, *Union 1* 2

Yes, *Union 2* 3

Please indicate how much you disagree or agree with each of the following statements about your job and employment situation.

	Strongly Disagree				**Strongly Agree**
12. My union is influential in affecting company policy.	**1**	**2**	**3**	**4**	**5**
13. I participate in making union policy.	**1**	**2**	**3**	**4**	**5**
14. I have significant influence over decisions in my work group or unit.	**1**	**2**	**3**	**4**	**5**
15. My work group or unit makes decisions democratically.	**1**	**2**	**3**	**4**	**5**
16. There is at least some chance that my ideas will be considered about department policy.	**1**	**2**	**3**	**4**	**5**
17. I feel very committed to *Municipal Department*.	**1**	**2**	**3**	**4**	**5**
18. The ***Municipality*** treats its employees fairly.	**1**	**2**	**3**	**4**	**5**
19. ***Municipal Department*** treats its employees fairly.	**1**	**2**	**3**	**4**	**5**
20. My **immediate supervisor** treats employees fairly.	**1**	**2**	**3**	**4**	**5**
21. My **co-workers** treat each other fairly.	**1**	**2**	**3**	**4**	**5**

	Strongly Disagree				Strongly Agree
22. The ***Municipality*** treats its employees with respect.	1	2	3	4	5
23. ***Municipal Department*** treats its employees with respect.	1	2	3	4	5
24. My **immediate supervisor** treats employees with respect.	1	2	3	4	5
25. My **co-workers** treat each other with respect.	1	2	3	4	5
26. My **immediate supervisor** understands the personal needs of his or her employees.	1	2	3	4	5
27. My job security is good.	1	2	3	4	5
28. My prospects for career development and promotions are good.	1	2	3	4	5
29. In five years, my skills will still be valuable.	1	2	3	4	5
30. ***Muncipal Department*** provides me with what I need to do my job well.	1	2	3	4	5
31. On the whole, I am satisfied working for ***Municipal Department***.	1	2	3	4	5
32. On the whole, I am satisfied with my performance in the job I do.	1	2	3	4	5

The next question deals with the employee services provided by *Municipal Department* and/or your union.

33. Please indicate which of the following support services and wellness programs to its employees. Please indicate which of the following services and programs you are **aware of**, which services **you have used** ***in the past year***, and whether you thought any particular program or service **was useful** to you.

    - If you are **aware of** or, or **have used** a particular service, please place a check mark (**√**) in the box.
    - If you are **NOT** aware of or have **NOT** used a particular service, please place an **X** in the box.
    - If a particular service **does not apply to you** (i.e., you don't belong to a union so wouldn't use their services) please write "**NA**" (not applicable) in the box.

			If you used this service, please indicate how useful it was for you:				
Program or Service	**Aware of √ or X**	**USED ⇒ √ or X**	**Not Useful**				**Very Useful**
A. Employee & Family Assistance Service			1	2	3	4	5
B. *Municipal* Chaplain			1	2	3	4	5
C. Disability Management Consultants and Medical Services			1	2	3	4	5
D. Discounted access to *municipal* fitness facilities			1	2	3	4	5
E. Self-funded leave			1	2	3	4	5
F. Self-help courses (e.g. anger management)			1	2	3	4	5
G. Skills development/training courses			1	2	3	4	5
H. Union Charitable Assistance Program			1	2	3	4	5
I. *Union 1* Education Bursaries			1	2	3	4	5
J. Alternative Dispute Resolution Services			1	2	3	4	5

K. Ergonomics/ Occupational Health and Safety Consultant			1	2	3	4	5

The next questions are quite different. They ask about how you felt about yourself in the past.

34. Think back to **when you were 18**. In general, what were your feelings about the following?
How much do you disagree or agree with these statements?

	Strongly Disagree				**Strongly Agree**
A. I felt that I had a number of good qualities.	**1**	**2**	**3**	**4**	**5**
B. I certainly felt useless at times.	**1**	**2**	**3**	**4**	**5**
C. I was able to do things as well as most other people.	**1**	**2**	**3**	**4**	**5**
D. On the whole, I was satisfied with myself.	**1**	**2**	**3**	**4**	**5**
E. All in all, I was inclined to feel that I was a failure.	**1**	**2**	**3**	**4**	**5**
F. At times I thought I was no good at all.	**1**	**2**	**3**	**4**	**5**

35. Again, I would like you to think about how you felt about yourself **when you were 18**.

	Strongly Disagree				**Strongly Agree**
A. I had little control over things that happened to me.	**1**	**2**	**3**	**4**	**5**
B. I felt I could control my own future.	**1**	**2**	**3**	**4**	**5**
C. There was little I could do to change many of the important things in my life.	**1**	**2**	**3**	**4**	**5**
D. I felt I could do anything if I set my mind to it.	**1**	**2**	**3**	**4**	**5**
E. I often felt helpless when dealing with problems.	**1**	**2**	**3**	**4**	**5**
F. I felt I was in control most of the time.	**1**	**2**	**3**	**4**	**5**

Now, back to the present. The next questions are about your **current** job.

36. Please indicate how much you disagree or agree with the following.

	Strongly Disagree				**Strongly Agree**
A. My job requires that I learn new things.	**1**	**2**	**3**	**4**	**5**
B. My job involves a lot of repetitive work.	**1**	**2**	**3**	**4**	**5**
C. My job requires me to be creative.	**1**	**2**	**3**	**4**	**5**
D. My job requires a high level of skill.	**1**	**2**	**3**	**4**	**5**
E. I get to do a variety of different things on my job.	**1**	**2**	**3**	**4**	**5**
F. I have an opportunity to develop my own special abilities.	**1**	**2**	**3**	**4**	**5**
G. My job allows me to make a lot of decisions on my own.	**1**	**2**	**3**	**4**	**5**
H. In my job, I have very little freedom to decide how I do my work.	**1**	**2**	**3**	**4**	**5**
I. My job requires working very fast.	**1**	**2**	**3**	**4**	**5**
J. I am asked to do an excessive amount of work.	**1**	**2**	**3**	**4**	**5**
K. I have enough time to get the job done.	**1**	**2**	**3**	**4**	**5**
L. I am free from conflicting demands that others make.	**1**	**2**	**3**	**4**	**5**

	Strongly Disagree				**Strongly Agree**
M. My tasks are often interrupted before they can be completed.	1	2	3	4	5
N. My job is very hectic.	1	2	3	4	5
O. I often have to wait for other people to finish their own work before I can do mine.	1	2	3	4	5
P. My job requires lots of physical effort.	1	2	3	4	5
Q. I am often required to move or lift heavy loads on my job.	1	2	3	4	5
R. My work requires rapid and continuous activity.	1	2	3	4	5
S. I am required to work for long periods of time in uncomfortable positions.	1	2	3	4	5

37. During the **past year**, how often did you worry about job loss or layoff?

Never				**Most of the time**
1	2	3	4	5

38. During the past year did you experience job loss or lay off?

No…………..… 1

Yes…………… 2

39. How likely is it that **during the next couple of years**, you will lose your **current** job?

Not at all likely **1**

Not too likely **2**

Somewhat likely **3**

Very likely **4**

Don't know **8**

40. Are you planning to leave your job, other than for retirement reasons, **within the next year**?

No .... **1** **⇨Skip to question 43**

Yes **2**

41. What are the main reasons for you planning to leave your job?

____

____

____

____

____

42. The following statements deal with your relationship with your immediate supervisor (or whoever you report to) in your **current** job.

	Strongly Disagree				Strongly Agree
A. My supervisor is concerned about the welfare of those under him or her.	1	2	3	4	5
B. My supervisor pays attention to what I am saying.	1	2	3	4	5
C. I am exposed to hostility or conflict from my supervisor.	1	2	3	4	5
D. My supervisor is helpful in getting the job done.	1	2	3	4	5
E. My supervisor is successful in getting people to work together.	1	2	3	4	5
F. I get useful feedback from my supervisor about the work I do.	1	2	3	4	5

43. These statements talk about how you feel about the people you work with in your **current** job.

	Strongly Disagree				Strongly Agree
A. People I work with are competent in doing their jobs.	1	2	3	4	5
B. People I work with take a personal interest in me.	1	2	3	4	5
C. I am exposed to hostility or conflict from the people I work with.	1	2	3	4	5
D. People I work with are friendly.	1	2	3	4	5
E. The people I work with encourage each other to work together.	1	2	3	4	5
F. People I work with are helpful in getting the job done.	1	2	3	4	5

44. This question asks about your current working environment.

	Strongly Disagree				Strongly Agree
A. My work area is noisy.	1	2	3	4	5
B. Safety hazards are a concern in my work area.	1	2	3	4	5
C. My job is physically dangerous.	1	2	3	4	5
D. My work area is dirty.	1	2	3	4	5
E. I feel that my work area is unhealthy.	1	2	3	4	5
F. My work environment is physically comfortable.	1	2	3	4	5

Shifting from questions about your job, the next questions are about you.

45. This question asks about how you feel about yourself, in general, **right now**. Please indicate how much you disagree or agree with the following statements.

	Strongly Disagree				Strongly Agree
A. I feel that I have a number of good qualities.	1	2	3	4	5
B. I certainly feel useless at times.	1	2	3	4	5
C. I am able to do things as well as most other people.	1	2	3	4	5
D. On the whole, I am satisfied with myself.	1	2	3	4	5
E. All in all, I am inclined to feel that I am a failure.	1	2	3	4	5
F. At times I think that I am no good at all.	1	2	3	4	5

46. In general**, compared to when you were 18,** would you say that you **now** have:

More confidence in yourself……….	1
About the same	2
Less confidence in yourself...........	3

47. This question also asks how you feel about yourself, in general, **right now**. Please indicate whether you disagree or agree with the following statements. Circle one answer only.

	Strongly Disagree				**Strongly Agree**
A. I have little control over things that happen to me.	1	2	3	4	5
A. I feel I can control my own future.	1	2	3	4	5
B. There is little I can do to change many of the important things in my life.	1	2	3	4	5
C. I feel I can do anything if I set my mind to it.	1	2	3	4	5
D. I often feel helpless when dealing with problems.	1	2	3	4	5
E. I feel I am in control most of the time.	1	2	3	4	5

48. In general**, compared to when you were 18,** would you say you **now** have:

More control over your life...........	1
About the same	2
Less control over your life…………	3

49. The following question deals with how you **resolve stressful situations** at work or at home.

Try to think of a situation that you found to be particularly stressful at work or home during the **past month**.

> **Now that you have thought of a stressful situation at work or at home, please use the scale below to indicate how often you engaged in each of the behaviours.**

	Never				**Most of the time**
A. I concentrated my efforts on doing something about the situation.	**1**	**2**	**3**	**4**	**5**
B. I took action to try to make the situation better.	**1**	**2**	**3**	**4**	**5**
C. I tried to come up with a strategy about what to do.	**1**	**2**	**3**	**4**	**5**
D. I thought hard about what steps to take.	**1**	**2**	**3**	**4**	**5**
E. I tried to see it in a different light, to make it seem more positive.	**1**	**2**	**3**	**4**	**5**
F. I looked for something good in what was happening.	**1**	**2**	**3**	**4**	**5**
G. I accepted the fact that it happened.	**1**	**2**	**3**	**4**	**5**
H. I learned to live with it.	**1**	**2**	**3**	**4**	**5**
I. I found comfort in my religion or spiritual beliefs.	**1**	**2**	**3**	**4**	**5**
J. I got help and advice from other people.	**1**	**2**	**3**	**4**	**5**

How often:	Never				Most of the time
K. I refused to believe that it happened.	1	2	3	4	5
L. I expressed my negative feelings.	1	2	3	4	5
M. I used alcohol or other drugs to help me get through it.	1	2	3	4	5
N. I gave up trying to deal with it.	1	2	3	4	5
O. I blamed myself for what happened.	1	2	3	4	5

The next set of questions deal with harassment and discrimination in the workplace.

Please read the following definition carefully before you answer the following questions.

Harassment is any *improper conduct* by an individual, that is directed at and offensive to another person or persons in the workplace, and that the individual knew or ought reasonably to have known would cause offence or harm. It comprises any *objectionable act, comment* or *display* that *demeans, belittles,* or *causes personal humiliation or embarrassment,* and *any act of intimidation or threat.* It includes harassment within the meaning of the Canadian Human Rights Act.

51. In the **past two years** have you ever been the victim of harassment on the job?

No .... 1 **⇨Skip to question 53 on page 16**

Yes 2

52. **From whom** did you experience harassment on the job and **how often** did this occur?

	Never		More than twice
A. Co-workers	1	2	3
B. Individuals with authority over me	1	2	3
C. Individuals working for me	1	2	3
D. Individuals from other departments or agencies	1	2	3
E. Members of the public (individuals or organizations)	1	2	3
F. Other - Please specify:	1	2	3

____

53. How satisfied are you with the way your **work unit** responds to harassment issues?

Very Dissatisfied				Very Satisfied
1	2	3	4	5

54. How satisfied are you with the way the ***Municipal Department*** responds to harassment issues?

Very Dissatisfied				Very Satisfied
1	2	3	4	5

55. How satisfied are you with the way your **union** responds to harassment issues?

Very Dissatisfied				Very Satisfied	Not Applicable (non-union)
1	2	3	4	5	9

Again, please read the following definition carefully before you answer the following questions.

Discrimination means to *treat someone differently or unfairly* because of a *personal characteristic* or distinction which, whether intentional or not, has an effect which *imposes disadvantages* not imposed upon others or which *withholds or limits access* to other members of society. There are eleven prohibited grounds under the Canadian Human Rights Act: *race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, family status, mental or physical disability and pardoned conviction.*

56. In the **past two years**, have you ever been the victim of discrimination on the job?

No .... 1 ⇨**Skip to question 58 on page 18**

Yes 2

57. **From whom** did you experience discrimination, **how often** did it occur, and **what type** of discrimination did you experience?

	Never	1 – 2 times	More than twice	What type of discrimination did you experience? (e.g., racial, gender, religion)
A. Co-workers	1	2	3	______________
B. Individuals with authority over me	1	2	3	______________
C. Individuals working for me	1	2	3	______________
D. Individuals from other departments or agencies	1	2	3	______________
E. Members of the public (individuals or organizations)	1	2	3	______________
F. Other (Please specify)	1	2	3	______________

58. How satisfied are you with the way your **work unit** responds to discrimination issues?

Very Dissatisfied				**Very Satisfied**
1	**2**	**3**	**4**	**5**

59. How satisfied are you with the way the ***Municipal Department*** responds to discrimination issues?

Very Dissatisfied				**Very Satisfied**
1	**2**	**3**	**4**	**5**

60. How satisfied are you with the way your **union** responds to discrimination issues?

Very Dissatisfied				**Very Satisfied**	**Not Applicable (non-union)**
1	**2**	**3**	**4**	**5**	**9**

The next question is concerned with the fit between work and home life.

61. How often in the ***past month*** have you experienced the following?

		Never				Most of the time
A.	I was preoccupied with my work while I was at home.	1	2	3	4	5
B.	My job made it difficult to get along with the people I live with, the way I would like.	1	2	3	4	5
C.	The amount of time my job takes up made it difficult to fulfill personal responsibilities.	1	2	3	4	5
D.	Because of my job, I didn't have the time to participate in the non-work activities I find relaxing and enjoyable.	1	2	3	4	5
E.	I was preoccupied with personal responsibilities while I was at work.	1	2	3	4	5
F.	My personal responsibilities made it difficult to get along with my supervisor and coworkers the way I would like.	1	2	3	4	5
G.	The demands of my personal responsibilities kept me from getting work done on time.	1	2	3	4	5
H.	Family issues made it difficult to do my job as well as I would like.	1	2	3	4	5
I.	Personal relationship issues made it difficult to do my job as well as I would like.	1	2	3	4	5

62. I wish I had more time to:	**Disagree Strongly**				**Agree Strongly**
A. Do things for myself.	**1**	**2**	**3**	**4**	**5**
B. Devote to my family.	**1**	**2**	**3**	**4**	**5**
C. Devote to volunteering in the community.	**1**	**2**	**3**	**4**	**5**
D. Advance my career.	**1**	**2**	**3**	**4**	**5**

Here are a few questions about your family.

63. Do you have children **under the age of 18** who are living with you?

No ....1 ⇨**Skip to question 66 on page 21**

Yes 2

64. This question deals with the responsibilities associated with having very young or school-aged children. Thinking of the **past month**, please indicate how often each of the statements apply to you.

	Never				**Most of the time**
A. I had an argument with my spouse over sharing child care responsibilities.	1	2	3	4	5
B. I argued with my child over getting ready to go in the morning.	1	2	3	4	5
C. I needed to work at home but was unable to because of my child.	1	2	3	4	5
D. I missed part of a day's work because childcare was not available.	1	2	3	4	5
E. I was late to work because of transporting my child to school/daycare.	1	2	3	4	5
F. I had to change my work schedule in order to take care of my child.	1	2	3	4	5
G. I missed part of a day's work in order to take my child to a medical appointment (e.g., doctor, dentist).	1	2	3	4	5
H. I missed work to attend a meeting or event at my child's school.	1	2	3	4	5

65. On average, how many hours do you personally spend **per week** looking after and/or spending time with your child(ren)?

Number of hours per week: ____________________

66. This question deals with the responsibility of being a caregiver. A caregiver has **extra** responsibilities when looking after a child or adult, who, because of an ongoing disability, chronic illness or age, requires **extra** care and attention and must rely on you for that care. Please **circle all answers** that apply to you:

	No	**Yes**
A. I am a caregiver for a disabled child	1	2
B. I am a caregiver for a disabled adult	1	2
C. I am a caregiver for an elderly parent or relative	1	2

If you answered YES to ANY of these questions, please continue. Otherwise ⇨ skip to question 69 on page 22

67. How much do you disagree or agree with the following:	**Strongly Disagree**				**Strongly Agree**
A. My activities are centred around caring for my dependent child/adult.	1	2	3	4	5
B. I have to stop in the middle of work to care for my dependent child/adult.	1	2	3	4	5
C. I have had to eliminate things from my schedule in order to care for my dependent child/adult.	1	2	3	4	5
D. The constant interruptions from my dependent child/adult make it difficult to find time for relaxation.	1	2	3	4	5
E. Visiting with family and friends is difficult because of caring for my dependent child/adult.	1	2	3	4	5

68. On average, how many hours do you spend **per week** in **extra** caregiving responsibilities, not counting the hours you spend normally looking after your child(ren):

Number of hours: _______________

69. The following statements deal with the type of support you can count on when you encounter difficult times. If the statement **does not apply** to you, please circle "9."

	Disagree Strongly				**Agree Strongly**	**N/A**
A. My family is always there for me.	1	2	3	4	5	9
B. I have friends that I can rely on for help and support.	1	2	3	4	5	9
C. My spouse or partner is always there for me when I have problems.	1	2	3	4	5	9
D. There is somebody I can talk to about very personal problems.	1	2	3	4	5	9
E. If I was sick, I know there would be someone to take care of me.	1	2	3	4	5	9
F. I often have to do things myself because people are not willing to help.	1	2	3	4	5	9
G. No matter what happens, there is always someone I can count on for help and support.	1	2	3	4	5	9

70. This question asks you about your feelings and thoughts during the **past month**. Please answer each question even though they may appear to be similar. How often in the past month:

		Never				Most of the time
A.	…have you been upset because of something that happened unexpectedly?	1	2	3	4	5
B.	…have you felt that you were unable to control the important things in your life?	1	2	3	4	5
How often in the past month:						
C.	… have you felt nervous and "stressed?"	1	2	3	4	5
D.	… have you dealt successfully with irritating life hassles?	1	2	3	4	5
E.	… have you felt that you were effectively coping with important changes that were occurring in your life?	1	2	3	4	5
F.	In the last month, how often have you felt confident about your ability to handle your personal problems?	1	2	3	4	5
G.	… have you felt that things were going your way?	1	2	3	4	5
H.	… have you found that you could not cope with all the things that you had to do?	1	2	3	4	5
I.	… have you felt that you were on top of things?	1	2	3	4	5
J.	… have you been angered because of things that happened that were outside of your control?	1	2	3	4	5
K.	… have you found yourself thinking about things that you have to accomplish?	1	2	3	4	5
L.	… have you been able to control the way you spend your time?	1	2	3	4	5
M.	… have you felt difficulties were piling up so high that you could not overcome them?	1	2	3	4	5

71. This question asks about your feelings about your **current work** over the **past month**. How often have you felt the following?

		Never				Most of the time
A.	Emotionally drained from my work	1	2	3	4	5
B.	Used up at the end of the workday	1	2	3	4	5
C.	Fatigued when I got up in the morning and had to face another day on the job	1	2	3	4	5
D.	Working with people all day was really a strain for me	1	2	3	4	5
E.	Burned out from my work	1	2	3	4	5
F.	Frustrated by my work	1	2	3	4	5
G.	I was working too hard at my work	1	2	3	4	5
H.	Working with people directly put too much stress on me	1	2	3	4	5
I.	I felt like I was at the end of my rope	1	2	3	4	5
J.	I felt I was positively influencing other people's lives through my work	1	2	3	4	5
K.	Very energetic	1	2	3	4	5
L.	I could easily create a relaxed atmosphere with the people I deal with	1	2	3	4	5
M.	Exhilarated after working closely with the people I dealt with	1	2	3	4	5
N.	Accomplished many worthwhile things in this job	1	2	3	4	5
O.	In my work, I dealt with emotional problems very calmly	1	2	3	4	5

72. This question asks about your feelings **in general** during the **past week**. How often have you felt each of the following?

	Never				Most of the time
A. I was bothered by things that usually don't bother me.	1	2	3	4	5
B. I did not feel like eating; my appetite was poor.	1	2	3	4	5
C. I felt that I could not shake off the blues even with help from my family or friends.	1	2	3	4	5
D. I felt that I was just as good as other people.	1	2	3	4	5
E. I had trouble keeping my mind on what I was doing.	1	2	3	4	5
F. I felt depressed.	1	2	3	4	5
G. I felt that everything I did was an effort.	1	2	3	4	5
H. I felt hopeful about the future.	1	2	3	4	5
I. I thought my life had been a failure.	1	2	3	4	5
J. I felt fearful.	1	2	3	4	5
K. My sleep was restless.	1	2	3	4	5
L. I was happy.	1	2	3	4	5
M. I talked less than usual.	1	2	3	4	5
N. I felt lonely.	1	2	3	4	5

73. Thinking about your life in general, **how happy** are you with your life?

Not at all Happy				**Very Happy**
1	**2**	**3**	**4**	**5**

74. How would you describe your financial situation?

Very Poor **(Not enough money to cover my needs)**				**Excellent** **(More than enough money to cover my needs and those of my family)**
1	**2**	**3**	**4**	**5**

75. How would you describe your physical health?

Very Poor				**Excellent**
1	**2**	**3**	**4**	**5**

76. How would you describe your mental health?

Very Poor				**Excellent**
1	**2**	**3**	**4**	**5**

77. In general, would you describe your life as:

Very Stressful				**Not at all Stressful**
1	**2**	**3**	**4**	**5**

78. In general, if you were to **compare your life now to a year ago**, would you say your life **now** is:

Much More Stressful				**A Lot Less Stressful**
1	2	3	4	5

79. How satisfied are you with your job?

Very Dissatisfied				**Very Satisfied**
1	2	3	4	5

80. During the **past 12 months**, how many days of work did you miss due to illness or injury?

Number of days:____________________

81. During the **past 12 months**, how many days of work did you miss because of family responsibilities?

Number of days: ____________________

82. Do you participate as a volunteer in your community?

No................................ 1 ⇨ **Skip to question 84**

Yes 2

83. On average, how many **hours per week** do you spend as a volunteer in your community?

Number of hours: ____________________

84. On average, how many **hours per week** do you engage in physical activity (not including employment or household chores)?

Number of hours: ________________

Finally, here are a few more questions about you to help us organize the answers from all the respondents in this survey. Remember, only group averages will be reported, not individual answers.

85. Are you:

Male 1

Female 2

86. How old are you?

Age in years ________________

87. Do you consider yourself to be a member of a visible minority group? (Members of visible minorities are persons who are non-Caucasian in race or non-white in colour. Examples of visible minority groups are: Black, Asian, Middle-eastern, etc.).

No 1

Yes 2

88. Do you consider yourself to have a physical disability that may disadvantage you in employment?

No 1

Yes 2

89. What are your current living arrangements?

Living with spouse or partner 1

Living alone .... 2 ⇨ **Skip to question 91**

Living with others .... 3 ⇨**Skip to question 91**

90. Does your spouse/partner have a paid job outside the home?

No 1

Yes 2

91. How many children do you have?

None .... 0 ⇨ **Skip to question 93 on page 29**

Number of children under age 6 ________________

Number of children age 6 – 12 _________________

Number of children age 13 – 17 ________________

Number of children age 18 & older _____________

92. How many children **under** 18 years of age are currently living with you?

Number of children _____________________

93. How many **dependent** adults do you have currently living with you? (Include adult-aged children (18 years of age and older) and other family or friends who **rely on you** for financial and/or caregiving support).

Number of adults __________________

94. What is your current, **yearly, combined household income** (***before taxes and deductions***)?

Less than $10,000	1
$10,000 to $19,999	2
$20, 000 to $29,999	3
$30,000 to $39,999	4
$40,000 to $49,999	5
$50,000 to $59,999	6
$60,000 to $69,999	7
$70,000 to $79,999	8
$80,000 to $89,999	9
$90,000 to $99,999	10
More than $100,000	11

95. What is the highest level of education that you have completed?

Less than high school	1
High School Diploma	2
Some Post-Secondary Education	3
Technical, Vocational or College Certificate/Diploma	4
University Degree	5

Thank you, once again, for participating in this survey. Your opinions are very important and will be treated with the utmost respect and confidentiality. Please return this questionnaire in the self-addressed envelope provided. Please **do not sign your name**.

If any of the questions in this survey have caused you emotional difficulty, you may wish to contact:

Employee Family Assistance
[redacted]

Do you have any additional comments about the study?

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APPENDIX 4.2 – SCALE DEVELOPMENT

SCALE DEVELOPMENT

Please refer to Appendix 4.1 to see the original the questionnaire.

DEPENDENT VARIABLE

Depression (CES-Depression Scale), Radloff (1977)

Questions 72 A to N: During the past week, how often have you felt each of the following (response categories, 1 = Never to 5 = Most of the time):

A. "I was bothered by things that usually don't bother me."
B. "I did not feel like eating; my appetite was poor."
C. "I felt that I could not shake off the blues even with help from my family or friends."
D. "I felt that I was just as good as other people."
E. "I had trouble keeping my mind on what I was doing."
F. "I felt depressed."
G. "I felt that everything I did was an effort."
H. "I felt hopeful about the future."
I. "I thought my life had been a failure."
J. "I felt fearful."
K. "My sleep was restless."
L. "I was happy."
M. "I talked less than usual."
N. "I felt lonely."

Items D, H and L were reverse coded.
The items were summed and divided by 14 for a total possible score of 5 = high depression.

Chronbach's Alpha = 0.91
N = 535 (Missing = 26)
Mean = 2.08
S.D. = 0.72
Range = 1 to 4.86

ALTERNATIVE DEPENDENT VARIABLE[1]

Emotional Exhaustion Scale - Maslach's Burnout Inventory (1986)

Questions 71 A to I: Over the past month, how often have you felt the following? (Response categories, 1 = Never to 5 = Most of the time)

A. "Emotionally drained from my work."
B. "Used up at the end of the workday."
C. "Fatigued when I got up in the morning and had to face another day on the job."
D. "Working with people all day was really a strain for me."
E. "Burned out from my work."
F. "Frustrated by my work."
G. "I was working too hard at my work."
H. "Working with people directly put too much stress on me."
I. "I felt like I was at the end of my rope."

The 9 items summed and divided by 9 for a total possible score of 5 = high burnout.
Chronbach's alpha = 0.91
N = 542 (Missing = 19)
Mean = 2.6
S.D.= 0.85
Range = 1 to 5

---

[1] **Alternative dependent variables were considered in my dissertation research but were not used. Please refer to Chapter 4 for a discussion on the decision to use depression as the outcome variable.**

ALTERNATIVE DEPENDENT VARIABLE

Perceived Stress Scale (Cohen, et al. 1983)

Questions 70 A to M: How often in the past month: (Response categories, 1 = Never to 5 = Most of the time).

A. "…have you been upset because of something that happened unexpectedly?"
B. "…have you felt that you were unable to control the important things in your life?"
C. "…have you felt nervous and "stressed"?"
D. "…have you dealt successfully with irritating life hassles?"
E. "…have you felt that you were effectively coping with important changes that were occurring in your life?"
F. "In the last month, how often have you felt confident about your ability to handle your personal problems?"
G. "…have you felt that things were going your way?"
H. …have you found that you could not cope with all the things you had to do?"
I. "…have you felt that you were on top of things?"
J. "…have you been angered because of things that happened that were outside of your control?"
K. "…have you found yourself thinking about things that you have to accomplish?"
L. "…have you been able to control the way you spend your time?"
M. "…have you felt difficulties were piling up so high that you could not overcome them?"

The original Perceived Stress Scale contained 14 items. I dropped original item number 9, "How often (in the past month) have you been able to control irritations in your life?" because of its similarity to item 5 (our item D).

Items D, E, F, G, I, L were reverse coded.
The 13 items were summed and divided by 13 for a total possible score of 5 = high perceived stress.

Chronbach's alpha = 0.88
N = 549 (Missing = 12)
Mean = 2.66
S.D. = 0.63
Range = 1.23 to 4.77

INDEPENDENT VARIABLES

Job Demand-Control-Support Model (Karasek, et al. 1986)

Development of the Job Strain Interaction Term

The Job Strain Interaction Term consists of three sub-scales: skill discretion, decision authority and psychological job demands. Skill discretion and decision authority are combined to create the Decision Latitude Scale (job control)[2], which is multiplied by Psychological Job Demands (job demands) to create the Job Strain Interaction Term. The following outlines the steps taken to create the Job Strain Interaction Term.

Step 1 – Development of the Skill Discretion Scale

All of Karasek's (1985) skill discretion questions were used in the scale. All of Karasek's original questions were based on a 4-point response set, where 1 = strongly disagree to 4 = strongly agree). The variables in this analysis were all measured on a 5-point scale from 1 = strongly disagree to 5 = strongly agree. Items in this scale include Q 37A to F: "Please indicate how much you disagree or agree with the following:

A "My job requires that I learn new things."
B "My job involves a lot of repetitive work."
C "My job requires me to be creative."
D "My job requires a high level of skill."
E "I get to do a variety of different things on my job."
F "I have an opportunity to develop my own special abilities."

Item B was reverse coded.

Chronbach's Alpha = 0.84

---

[2] The mean, sample size, standard deviation and range are reported for the composite Decision Latitude Scale – Step 3

Step 2 – Development of the Decision Authority Scale

Only two out of the three Karasek questions were used to create this scale. The Workers' Wellness Advisory committee decided to drop "I have a lot of say about what happens on my job," because they felt it was similar to, "My job allows me to make a lot of decisions on my own." Items in this analysis include Q 37G and 37H: "Please indicate how much you disagree or agree with the following:

G "My job allows me to make a lot of decisions on my own."
H "In my job, I have very little freedom to decide how do my work."

Item H was reverse coded.

Chronbach's Alpha = 0.64

Step 3 – Development of the Weighted Decision Latitude Scale

The skill discretion scale was divided by 6 (6 items in the scale) for an overall total possible score of 5. Similarly, the decision authority scale was divided by 2 (2 items in the scale) for a total possible score of 5. The two scales were summed and divided by 2 to give each sub-scale equal weighting. The decision latitude scale has a total possible score of 5, where 5 = high decision latitude.

N = 547 (Missing cases = 14)
Mean = 3.6
S.D. = 0.75
Range = 1.08 to 5

Step 4 – Creating the Psychological Demands Scale

Psychological Job Demands

I used all of Karasek's items in this scale except for the item "My job requires working very hard." The Committee felt this question was ambiguous and could easily be associated with either physical job demands as well as psychological job demands. Items in the scale include Q37 I to P: "Please indicate how much you disagree or agree with the following:

I "My job requires working very fast."
J "I am asked to do an excessive amount of work."
K "I have enough time to get the job done."
L "I am free from conflicting demands that others make."
M "My job requires long periods of intense concentration."
N "My tasks are often interrupted before they can be completed."

O “My job is very hectic.”
P “I often have to wait for other people to finish their own work before I can do mine.

Item J was positively reworded from Karasek’s original “I am not asked to do an excessive amount of work” (Q22).
Item M was reworded from Karasek’s original “My job requires long periods of intense concentration on the task” (Q27)
Item P was reworded from Karasek’s original, “Waiting on work from other people or departments often slows me down on my job” (Q32).

Items K and L were reverse coded.

The 8 items were summed and divided by 8 for a total possible score of 5 = high psychological job demands.

Chronbach’s Alpha = 0.84
N = 542 (Missing = 19)
Mean = 3.13
S.D. = 0.78
Range = 1 to 5

Step 5 – Creating the Job Strain Interaction Term[3]

High strain on the job strain scale is comprised of low decision latitude and high psychological demands. In order for the job strain interaction term to range from low to high strain, it was necessary to reverse code the weighted decision latitude scale. Since one of the items in the decision latitude scale was already reverse coded, the scale needed to be reverse coded in a different manner so as not to compromise the integrity of the scale. The method chosen was to multiply the weighted decision latitude scale by –1 and then add six ((declatwt * -1) + 6 = declatw2). This resulted in a total possible score of 5, where 1 equals high decision latitude and 5 equals low decision latitude. A correlation analysis of declatwt and declatw2 revealed that the 2 scales were perfectly correlated (r = -1.00**).

The job strain interaction term is comprised of decision latitude and psychological job demands. The new decision latitude scale (declatw2) was multiplied by the psychological job demand scale to create the job strain interaction term (jobstran). Job strain has a total possible score of 25, where 1 equals high decision latitude and low psychological demands (low strain) and 25 equals low decision latitude and high psychological demands (high strain). A frequency analysis was performed on the job strain variable.

Frequency Statistics:

N = 539 (Missing cases = 22)
Mean = 7.4
S.D. = 2.75
Range = 2.48 to 22.08

---

[3] In Karasek (1979) Appendix B: Interaction Formulations, Karasek defines the "Absolute Value of the Discrepancy Interaction as Job Stain = [Demands-Decision Latitude + c]. He describes the formula as follows:

> In this formulation job strain is determined by the absolute value of the discrepancy between job demands and job decision latitude. Use of the absolute value term avoids the problem of multicolinearity that would otherwise occur for the "relative excess" interaction. In order to retain some of the original implications of the relative excess interaction (strain equals the excess of demands over decision latitude) we include a constant term that places three quarters of the sample in the category where too many demands make the absolute value expression positive, and one quarter in the category where an excess of decision latitude makes the expression positive. A value of the constant of 1.5 was empirically selected to accomplish this.

The Job Strain Model

Job Decision Latitude	**Psychological Job Demands**		**Job Strain**
	Low = 1	High = 5	Activity Level
High = 1	"low strain" job HL Min. Score = 1	"active" job HH	
Low = 5	"passive" job LL	"high strain" job LH Max. Score = 25	
			Unresolved Strain

Possible Scores on the Job Strain Model

Decision Latitude High to Low	**Psychological Demands Low to High**	**Job Strain (Column 1 X Column 2) Low to High**
1	1	1
2	2	4
3	3	9
4	4	16
5	5	25

Supervisor Social Support

Items in this scale included Q 43A to E: "How much do you disagree or agree with the following statements about your relationship with your immediate supervisor?

A. "My supervisor is concerned about the welfare of those under him or her."
B. "My supervisor pays attention to what I am saying."
C. "I am exposed to hostility or conflict from my supervisor."
D. "My supervisor is helpful in getting the job done."
E. "My supervisor is successful in getting people to work together."

Item C was reverse coded.

The 5 items were summed and divided by 5 for a total possible score of 5 = High Supervisor Support

Chronbach's Alpha = 0.89
N = 543 (Missing = 18)
Mean = 3.6
S.D. = 0.98
Range = 1 to 5

Co-worker Social Support

Items in this scale included Q 44A to F: "How much do you disagree or agree with the following statements about your relationship with your co-workers?

A. "People I work with are competent in doing their jobs."
B. "People I work with take a personal interest in me."
C. "I am exposed to hostility or conflict from the people I work with."
D. "People I work with are friendly."
E. "The people I work with encourage each other to work together."
F. "People I work with are helpful in getting the job done."

Item C was reverse coded.
The 6 items were summed and divided by 6 for a total possible score of 5 = High Co-worker Social Support.

Chronbach's Alpha = 0.88
N = 545 (Missing = 16)
Mean = 3.65
S.D. = 0.84
Range = 1 to 5

Other Scales in the Karasek Model

Macro-Level Decision Authority

Items in this scale include Question 9, which asks how many people do you supervise. This question was recoded to reflect Karasek's original categories (Q 15 "I supervise other people as part of my job: 1 = NO; 2 = Yes, 1-4 people; 3 = Yes, 5-10 people; 4 = Yes, 11-20 people, and 5 = Yes, More than 20 people). The recoded variable was renamed "ksupervs." In addition to Question 9, the following items were also included in the scale: 13, 14, 15, 16, and 17: How much do you disagree or agree with each of the following statements:

13. "My union is influential in affecting company policy."
14. "I participate in making union policy."
15. "I have significant influence over decisions in my work group or unit."
16. "My work group or unit makes decisions democratically."
17. "There is at least some chance that my ideas will be considered about department policy."

Item 14 was reworded from Karasek's original question 18, "I have influence over the policies of the union," because the Committee felt it was more objective to ask about participation which assumes you will have influence if you participate.

Item 17 was reworded from Karasek's original question 14, "I have at least some chance that my ideas will be considered about company policy…" for stylistic reasons.

Because not all respondents in this study belong to a union, the scale had to be adjusted to take into account non-unionized members. The following steps were taken:

Step 1 = declatmc (Macro-Level Decision Authority) = (13 + 14 + 15 + 16+ 17 + ksupervis) /6 and (select if: Q12 (union membership) = 2 or 3 (the two unions in this study) for a total possible score of 5 = High Macro-Level Decision Authority.

Step 2 = adjusting for non-union members: declatmc = (15 + 16 + 17 + ksupervs) / 4 and (select if union = 1) for a total possible score of 5 = High Macro-Level Decision Authority.

Chronbach's Alpha = 0.64
N = 508 (Missing = 58)
Mean = 2.65
S.D. = .73
Range = 1 to 5

Job Security (Karasek's original scale was called Job Insecurity)

This scale included questions 28, 29, 30, 38 and 40. We dropped Karasek's question "How steady is your work?" because this information was captured by our questions on work hours, employment status, and hours of work. Questions 28, 29, and 30 asked, "How much do you disagree or agree with each of the following statements about your job and employment situation?" (Where 1 = Strongly Disagree and 5 = Strongly Agree):

28. "My job security is good."
29. "My prospects for career development and promotions are good."
30. "In five years, my skills will still be valuable."

Question 38 asked, "During the past year, how often did you worry about job loss or layoff?" (Where 1 = Never and 5 = Most of the time). Question 38 was reworded from Karasek's original (Q35, "During the past year, how often were you in a situation where you faced job loss or layoff?"). This question was also reverse coded.

Question 40 asked, "How likely is it that during the next couple of years, you will lose your job?" (Where 1 = Not at all likely and 4 =Very likely). This question was reworded from Karasek's original (Q 36, "Sometimes people permanently lose jobs they want to keep. How likely is it that during the next couple of years you will lose your present job with your employer?"). This question was also reverse coded. In addition, question 40 was originally on a 4-point scale. To be consistent with all other questions in the survey, the response categories were recoded to a 5-point scale. To make it a 5-point, reverse coded scale we converted the following values: 1=5, 2=4, 3=2, 4=1 and assigned the neutral value of 3 to don't know (originally coded 8).

The 5 items were summed and divided by 5 to give a total possible score of 5 = High Job Security

Chronbach's Alpha = 0.71
N = 536 (Missing = 25)
Mean = 3.42
S.D. = .8
Range = 1 to 5

Physical Job Demands

The questions in this scale include 37Q to T: "Please indicate how much you disagree or agree with the following:" where 1 = strongly disagree and 5 = strongly agree:

Q. "My job requires lots of physical effort."
R. "I am often required to move or lift heavy loads on my job."
S. "My work requires rapid and continuous activity."
T. "I am required to work for long periods of time in uncomfortable positions."

Combined and reworded Karasek's "awkward body positions" and "awkward arm positions" to "uncomfortable positions" (Q 37T). There was no recoding of the variables.

The items were summed and divided by 4 for a total possible score of 5 = High Physical Job Demands

Chronbach's Alpha = .79
N = 550 (Missing = 11)
Mean = 2.43
S.D. = 1.00
Range = 1 to 5

Remaining Scales in the Core Theoretical Model

Physical Work Environment (Workers' Wellness Advisory Committee)

This index measures the degree to which individuals experience discomfort in their working environment. Items for this index measure are found in Question 45 A-F and are answered on a five-point scale where 1 = Strongly Disagree and 5 = Strongly Agree. The items are as follows:

A. "My work area is noisy."
B. "Safety hazards are a concern in my work area."
C. "My job is physically dangerous."
D. "My work area is dirty."
E. "I feel that my work area is unhealthy."
F. "My work environment is physically

Item F was reverse coded. The items were summed and divided by six to produce a total possible score of 5 = Poor working environment.

Chronbach's Alpha = 0.77
N = 545 (Missing = 16)
Mean = 2.54
S.D. = .87
Range = 1 to 5

Work/Family Conflict Scales (MacDermid, 2000)

Work to Life Conflict

This scale measures the extent to which work issues spill over into home life. The items in this scale come from Question 61 A-D. Respondents are asked, "How often during the past month have you experienced the following," and are measured on a five-point scale that ranges from 1 = Never to 5 = Most of the time. The original item was based on the "past three months" and had a 4-point response set where 1 equals rarely and 4 equals most of the time. Item B was reworded from the original "My job made it difficult to *maintain the kind of relationships with my family* that I would like." The items are:

A. "I was preoccupied with my work while I was at home."
B. "My job made it difficult to get along with the people I live with, the way I would like."
C. "The amount of time my job takes up made it difficult to fulfill personal responsibilities."
D. "Because of my job, I didn't have the time to participate in the non-work activities I find relaxing and enjoyable."

None of the items were reverse coded. The four items were summed and divided by 4 for a total possible score of 5, which equals high work to life conflict.

Chronbach's Alpha = 0.81
N = 555 (Missing = 6)
Mean = 2.42
S.D. = .93
Range = 1 to 5

Life to Work Conflict

This scale measures the degree to which family life interferes with one's ability to do one's job well. It includes 3 of Pitt-Catsouphes' original items Q 61 E-G, plus two additional items suggested by the Advisory Committee - Q 61 H-I. The response format for these items is the same as above. The items are as follows:

E. "I was preoccupied with personal responsibilities while I was at work."
F. "My personal responsibilities made it difficult to get along with my supervisor and co-workers the way I would like."
G. "The demands of my personal responsibilities kept me from getting work done on time."
H. "Family issues made it difficult to do my job as well as I would like."
I. "Personal relationship issues made it difficult to do my job as well as I would like."

Items were summed and divided by five for a total possible score of 5 which equals high life to work conflict.

Chronbach's Alpha = 0.82
N = 552 (Missing = 9)
Mean = 1.67
S.D. = 0.63
Range = 1 to 4.2

General Social Support (Based on Jarvis and Gartrell's Scale in (Werner-Leonard, 1991)

This scale measures the extent to which individuals perceive that they can rely on their family, friends and colleagues for social support when needed. It consists of eight items (Question 69 A-H) on a scale from 1 to 5, where 1=Disagree Strongly and 5 = Agree Strongly. The items are:

A. "My family is always there for me."
B. "I have friends that I can rely on for help and support."
C. "My spouse or partner is always there for me when I have problems."
D. "There is somebody I can talk to about very personal problems."
E. "If I was sick, I know there would be someone to take care of me."
F. "I often have to do things myself because people are not willing to help."
G. "No matter what happens, there is always someone I can count on for help and support."
H. "I can rely on my colleagues at work for help and support."

Step 1

Item F was reverse coded. The eight items were summed for a total possible score of 40, which equals high social support.

Chronbach's Alpha = .83
N = 341 (Missing = 220)
Mean = 32.66
S.D. = .5.79

Step 2

To adjust for the missing values that mainly resulted from Item C (this item was related to married or cohabiting individuals only) conditions were placed on the scale and a new scale was created. The conditions stated that if an individual was living alone (Question 89 =2) or living with others (Question 89=3) then the new general social support scale (GSS2) would equal Question 69 A to H (minus C). This new scale was summed and divided by the seven remaining items for a total possible score of 5, which equals high social support. However, if the individual was living with a spouse or partner (Question 89=1) the eight items were summed and divided by 8 for a total possible score of five.

Chronbach's Alpha = 0.83
N = 530 (Missing = 31)
Mean = 3.95
S.D. = 0.82
Range = 1 to 5

Personal Resources

Self-esteem Scale (Rosenberg, 1965)

The six items for this scale are from Question 46 A to F. The original scale consists of 10 questions. The following items were removed from the scale because the Advisory Committee felt they were redundant or confusing and, because of the length of the questionnaire, we needed to be as parsimonious as possible.

- I feel I do not have much to be proud of.
- I feel that I am a person of worth, at least on an equal plane with others.
- I wish I could have more respect for myself.
- I take a positive attitude toward myself.

Respondents were asked to indicate, on a 5-point scale whether they "Strongly Disagree" (1) to "Strongly Agree" with the following statements:

A. "I feel that I have a number of good qualities."
B. "I certainly feel useless at times."
C. "I am able to do things as well as most other people."
D. "On the whole, I am satisfied with myself."
E. "All in all, I am inclined to feel that I am a failure."
F. "At times I think that I am no good at all."

Items B, E and F were reverse-coded. The items were summed and divided by 6 for a total possible score of 5 that indicates high self-esteem.

Chronbach's Alpha = 0.79
N = 543 (Missing = 18)
Mean = 4.33
S.D. = 0.59
Range = 1.83 to 5

Mastery Scale Adapted from Pearlin et al. (1981)

Pearlin's original scale contained 7 items. Two of the items were removed because of redundancy. The two items that were eliminated were: "There is really no way I can solve some of the problems I have," and "Sometimes I feel that I'm being pushed around in life." Five of these items were used in this scale and item F was newly introduced. introduced. Items are from Question 48 A to F. Responses were coded as above (Strongly Disagree to Strongly Agree). The statements included in this question are:

A. "I have little control over things that happen to me."
B. "I feel I can control my own future."
C. "There is little I can do to change many of the important things in my life."
D. "I feel I can do anything if I set my mind to it."
E. "I often feel helpless when dealing with problems."
F. "I feel I am in control most of the time."

B was reworded from Pearlin's original, "What happens to me in the future mostly depends on me." Item D was reworded from the original, "I can do just about anything I really set my mind to." And, finally, item E was originally, "I often feel helpless in dealing with the problems of life." Item F was newly added. Items A, C, and E were reverse coded. The items were summed and divided by 6 for a total possible score of 5, high mastery.

Chronbach's Alpha = .79
N = 541 (Missing = 20)
Mean = 3.94
S.D. = .68
Range = 1.5 to 5

Coping (Carver, 1997)

The Brief COPE scale was developed to reduce the amount of time and effort it takes to complete the full COPE scale, which, Carver argues, reduces the participant's response burden thereby increasing the participant's commitment to involvement in the process. The scales used in this analysis have been named Active Coping and Avoidance Coping. Items in the Active Coping scale reflect an individual's ability to adapt to stressors and are considered as a positive attempt at resolving problems. Carter has characterized active coping behaviours used in this analysis as: active coping, positive reframing and planning. The Avoidance Coping scale looks at measures that appear to be dysfunctional or maladaptive responses that do not necessarily result in problem resolution and may, in fact, lead to feelings of increased stress. Avoidance coping behaviours include: denial, substance use, venting, behavioural disengagement and self-blame [Carver, 1997 #28].

Because I felt that it was important to focus on behavioural coping styles a number of Carver's items were not used in the analysis and include measures of acceptance, humour[4], religion, and self-distraction. Items relating to using emotional and instrumental support were also omitted because they appeared to be related to social support.

The questions used in this scale were presented in the past tense whereas Carver's are presented in the present tense. Carver's scale uses 28 items to measure each construct. The active coping scale uses both items for each construct. However, many of the items in the avoidant coping scale were considered to be redundant so single items were used to measure each construct in this scale. Items in the active coping scale were selected on the basis of behaviours that demonstrated an active role in problem solving. Similarly, items in the avoidance coping scale were selected on the basis of either behaviours or thoughts that attempted to avoid confronting the problem.

Active Coping – based on Q50 A-F, respondents were asked to think about a situation they found to be particularly stressful and how often they engaged in each of the behaviours, outlined below on a 5-point scale, where 1 indicates "Never" and 5 indicates "Most of the time."

A. I concentrated my efforts on doing something about the situation. (Active coping)
B. I took action to try to make the situation better. (Active coping)
C. I tried to come up with a strategy about what to do. (Planning)
D. I thought hard about what steps to take. (Planning)
E. I tried to see it in a different light, to make it seem more positive. (Positive reframing)

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[4] It is difficult to determine whether humour is adaptive or a form of avoidance so rather than making an assumption one way or the other, it was left out of the scale.

F. I looked for something good in what was happening. (Positive reframing)

The items were summed and divided by six for a total possible score of 5, indicating high active coping.

Chronbach's Alpha = .87
N = 551 (Missing = 10)
Mean = 4.05
S.D. = 0.65
Range = 1 to 5

Avoidance Coping – derived from items L to P in Question 50. The same context and response set was used as in Active Coping. However, I chose to use only one of each of the avoidance coping behaviours because of redundancy. The items that were omitted are shown in parentheses. That is, although Carter offers two items for each concept, in the case of avoidance coping, I used only one. The items were summed and divided by 5 for a total score of 5, which refers to high avoidance coping. The items are:

L. I refused to believe that it happened. (Denial)
(I said to myself "this isn't real.")
M. I expressed my negative feelings. (Venting)
(I said things to let my unpleasant feelings escape.)
N. I used alcohol or other drugs to help me get through it. (Substance use)
(I used alcohol or other drugs to make myself feel better.)
O. I gave up trying to deal with it. (Behavioural disengagement)
(I gave up attempting to cope.)
P. I blamed myself for what happened. (Self-blame)
(I criticized myself.)

Chronbach's Alpha = 0.57
N = 549 (Missing = 12)
Mean = 2.09
S.D. = 0.62
Range = 1 to 5

Personal Resources at Age 18

The Self-esteem and Mastery Scales were reconfigured to ask individuals how they felt about their self-esteem and mastery at the age of 18. Each of these scales was worded in the past tense. The purpose of these variables was to provide a baseline from which current levels of self-esteem and mastery could be compared. .The premise is that if self-esteem and mastery levels are at similar levels at both points in time, then it could be argued that both measures could be the result of socialization over the life course. On the other hand, if the levels of self-esteem and mastery are substantively different at both points in time, they could be affected by current work and life experiences.

Self-esteem at the Age of 18

Self-esteem at 18 was measured using items A to F in Question 35. The items are the same as in Question 46, although the question asks respondents to "think back to when you were 18. In general, what were your feelings about the following?" As in Question 46, items B, E and F were reverse coded. The items were summed and divided by 6 for a total possible score of 5, indicating high self-esteem at age 18. Statistics from Question 46 are presented in parentheses for comparison.

Chronbach's Alpha = 0.79 (0.79)
N = 542 (Missing = 19) (543/18)
Mean = 3.97 (4.33)
S.D. = 0.68 (0.59)
Range = 1.7 to 5 (1.83 to 5)

Mastery at the Age of 18

As with the Self-esteem variable, Mastery at 18 is measured in Question 36 using the same items as in Question 48. The same items were reversed coded and the response was the same as before (Strongly Disagree to Strongly Agree). The items were summed and divided by six for a total possible score of 5 indicating high mastery at the age of 18. Current mastery statistics are presented in parentheses to allow for comparison.

Chronbach's Alpha = 0.82 (0.78)
N = 544 (Missing = 17) (541/20)
Mean = 3.69 (3.94)
S.D. = 0.74 (0.68)
Range = 1 to 5 (1.5 to 5)

APPENDIX 5.1 – CORRELATION MATRIX

CORRELATION MATRIX

Variable	1	2	3	4	5	6	7	8
1. Depression	1	-	-	-	-	-	-	-
2. Job Strain	.316	1	-	-	-	-	-	-
3. Job Security	-.388	-.293	1	-	-	-	-	-
4. Financial Security	-.347	-.169	.320	1	-	-	-	-
5. Work-Life Conflict	.291	.305	-.066	-.073	1	-	-	-
6. Life-Work Conflict	.504	.101	-.127	-.272	.173	1	-	-
7. Unpaid Overtime	-.021	.097	.043	.111	.445	-.076	1	-
8. Physical Environment	.296	.305	-.285	-.248	.049	.177	-.078	1
9. Supervisor	.066	.038	.065	-.024	.204	.011	.228	-.010
10. Earn Deserve	.026	.159	-.094	-.150	.130	-.057	.082	.129
11. Overqualified	.041	.189	-.118	-.071	.010	-.014	-.001	.185
12. Coworker SS	-.262	-.268	.280	.180	-.162	-.052	.009	-.287
13. Supervisor SS	-.197	-.318	.339	.117	-.200	-.053	-.019	-.214
14. General SS	-.442	-.212	.317	.368	-.158	-.283	-.024	-.228
15. Gender	-.145	.076	.045	.161	.020	-.075	.076	-.054
16. Age	-.014	-.105	-.028	.172	.048	-.100	.125	-.240
17. Education	-.114	-.070	.109	.173	.153	-.128	.317	-.227
18. Marital Status	-.037	-.014	.036	.190	.151	-.116	.111	-.093
19. Household Income	-.126	-.057	.185	.377	.204	-.153	.227	-.250
20. Eldercare	.073	.079	-.009	.077	.085	.050	.027	.021
21. Minority Status	.099	.008	-.049	-.130	-.053	.130	-.058	.026
22. Physical Disability	.204	..116	-.152	-.162	.117	.078	.068	.125
23. Clerical Worker	-.010	.189	.054	.003	-.076	-.002	-.178	-.115
24. Technical Worker	.113	.039	-.197	-.209	-.134	.096	-.132	.470
25. Mgmt. & Professional	-.098	-.175	.109	.206	.259	-.073	.337	-.392
26. Full-time	.057	.023	-.107	-.062	.090	-.022	.093	-.077
27. Job Status	-.035	.042	.235	.166	.269	-.069	.300	-.308
28. Discrimination	.109	.143	-.141	-.037	.076	.059	-.023	.141
29. Harassment	.190	.236	-.211	-.114	.119	.068	.028	.268
30. Self-Esteem	-.517	-.196	.203	.165	-.128	-.370	.010	-.162
31. Mastery	-.591	-.238	.349	.335	-.191	-.317	-.021	-.222
32. Active Coping	-.267	-.076	.087	.135	.076	-.249	.097	-.112
33. Avoidance Coping	.475	.082	-.130	-.189	.149	.452	-.063	.203
34. Self-esteem @ 18	-.221	-.054	.115	.144	.045	-.187	.084	-.102
35. Mastery @ 18	-.271	-.070	.145	.163	.032	-.168	.160	-.145

Correlation Matrix, continued

Variable	9	10	11	12	13	14	15	16
1. Depression	-	-	-	-	-	-	-	-
2. Job Strain	-	-	-	-	-	-	-	-
3. Job Security	-	-	-	-	-	-	-	-
4. Financial Security	-	-	-	-	-	-	-	-
5. Work-Life Conflict	-	-	-	-	-	-	-	-
6. Life-Work Conflict	-	-	-	-	-	-	-	-
7. Unpaid Overtime	-	-	-	-	-	-	-	-
8. Physical Environment	-	-	-	-	-	-	-	-
9. Supervisor	1	-	-	-	-	-	-	-
10. Earn Deserve	.085	1	-	-	-	-	-	-
11. Overqualified	-.068	.213	1	-	-	-	-	-
12. Co-worker SS	-.017	-.079	-.115	1	-	-	-	-
13. Supervisor SS	.055	-.027	-.118	.410	1	-	-	-
14. General SS	.046	-.015	-.084	.346	.291	1	-	-
15. Gender	-.113	.030	-.053	.057	-.056	.137	1	-
16. Age	.052	.007	-.105	-.059	.028	-.080	-.091	1
17. Education	.017	.064	.110	.117	-.037	.129	.140	-.014
18. Marital Status	.105	.022	.012	.040	-.015	.221	.047	.163
19. Household Income	.125	-.016	-.092	.092	-.060	.246	.068	.165
20. Eldercare	.022	.042	.007	-.025	-.009	-.041	.087	.126
21. Minority Status	.036	-.001	.063	-.094	-.095	-.072	-.056	-.037
22. Physical Disability	.080	.132	.108	-.115	-.074	-.203	-.052	.090
23. Clerical Worker	-.124	.071	.063	.099	.065	.067	.297	-.080
24. Technical Worker	-.085	-.041	.091	-.111	-.132	-.142	-.216	-.257
25. Mgmt. & Professional	.002	-.016	-.149	.065	.029	.108	.154	.211
26. Full-time	.168	.104	-.038	-.054	-.023	-.045	-.211	.310
27. Job Status	.242	.114	-.150	.029	-.022	.071	.161	.431
28. Discrimination	-.058	.114	.095	-.190	-.169	-.169	.046	-.069
29. Harassment	-.007	.091	.085	-.294	-.279	-.274	.035	-.109
30. Self-Esteem	-.020	.076	.056	.129	.102	.260	.058	-.017
31. Mastery	-.046	-.009	.032	.231	.154	.415	.088	-.064
32. Active Coping	-.010	.075	.052	.139	.043	.249	.179	.071
33. Avoidance Coping	-.017	.022	.007	-.161	-.075	-.223	-.063	-.046
34. Self-esteem @ 18	.062	.064	.004	.071	-.020	.176	-.064	-.020
35. Mastery @ 18	.044	.068	.015	.134	-.012	.226	-.024	-.030

Correlation Matrix, continued

Variable	17	18	19	20	21	22	23	24
1. Depression	-	-	-	-	-	-	-	-
2. Job Strain	-	-	-	-	-	-	-	-
3. Job Security	-	-	-	-	-	-	-	-
4. Financial Security	-	-	-	-	-	-	-	-
5. Work-Life Conflict	-	-	-	-	-	-	-	-
6. Life-Work Conflict	-	-	-	-	-	-	-	-
7. Unpaid Overtime	-	-	-	-	-	-	-	-
8. Physical Environment	-	-	-	-	-	-	-	-
9. Supervisor	-	-	-	-	-	-	-	-
10. Earn Deserve	-	-	-	-	-	-	-	-
11. Overqualified	-	-	-	-	-	-	-	-
12. Coworker SS	-	-	-	-	-	-	-	-
13. Supervisor SS	-	-	-	-	-	-	-	-
14. General SS	-	-	-	-	-	-	-	-
15. Gender	-	-	-	-	-	-	-	-
16. Age	-	-	-	-	-	-	-	-
17. Education	1	-	-	-	-	-	-	-
18. Marital Status	.063	1	-	-	-	-	-	-
19. Household Income	.305	.482	1	-	-	-	-	-
20. Eldercare	-.026	.063	.058	1	-	-	-	-
21. Minority Status	-.081	-.010	-.093	-.001	1	-	-	-
22. Physical Disability	-.104	.023	-.130	.144	.155	1	-	-
23. Clerical Worker	-.222	.049	-.044	.018	-.027	.053	1	-
24. Technical Worker	-.243	-.169	-.300	-.048	-.054	.006	-.338	1
25. Mgmt. & Professional	.516	.113	.374	.016	-.026	-.070	-.273	-.525
26. Full-time	-.002	.060	.153	.069	-.009	.056	-.101	-.127
27. Job Status	.232	.180	.417	.133	-.085	.032	.044	-.438
28. Discrimination	.028	-.092	-.082	.060	.132	.061	-.057	.015
29. Harassment	-.098	-.006	-.126	.081	.077	.126	.014	.117
30. Self-Esteem	.074	.031	.068	-.011	-.032	-.113	.015	-.068
31. Mastery	.070	.017	.112	-.024	-.056	-.161	.061	-.106
32. Active Coping	.122	.056	.113	.021	-.042	.024	-.055	-.144
33. Avoidance Coping	-.099	-.059	-.081	.056	.048	.027	-.044	.098
34. Self-esteem @ 18	.096	.100	.132	.028	.022	.028	-.055	-.073
35. Mastery @ 18	.200	.035	.154	-.018	-.038	-.033	-.064	-.080

Correlation Matrix, continued

Variable	25	26	27	28	29	30	31	32
1. Depression	-	-	-	-	-	-	-	-
2. Job Strain	-	-	-	-	-	-	-	-
3. Job Security	-	-	-	-	-	-	-	-
4. Financial Security	-	-	-	-	-	-	-	-
5. Work-Life Conflict	-	-	-	-	-	-	-	-
6. Life-Work Conflict	-	-	-	-	-	-	-	-
7. Unpaid Overtime	-	-	-	-	-	-	-	-
8. Physical Environment	-	-	-	-	-	-	-	-
9. Supervisor	-	-	-	-	-	-	-	-
10. Earn Deserve	-	-	-	-	-	-	-	-
11. Overqualified	-	-	-	-	-	-	-	-
12. Coworker SS	-	-	-	-	-	-	-	-
13. Supervisor SS	-	-	-	-	-	-	-	-
14. General SS	-	-	-	-	-	-	-	-
15. Gender	-	-	-	-	-	-	-	-
16. Age	-	-	-	-	-	-	-	-
17. Education	-	-	-	-	-	-	-	-
18. Marital Status	-	-	-	-	-	-	-	-
19. Household Income	-	-	-	-	-	-	-	-
20. Eldercare	-	-	-	-	-	-	-	-
21. Minority Status	-	-	-	-	-	-	-	-
22. Physical Disability	-	-	-	-	-	-	-	-
23. Clerical Worker	-	-	-	-	-	-	-	-
24. Technical Worker	-	-	-	-	-	-	-	-
25. Mgmt. & Professional	1	-	-	-	-	-	-	-
26. Full-time	.188	1	-	-	-	-	-	-
27. Job Status	.393	.391	1	-	-	-	-	-
28. Discrimination	.024	-.084	-.045	1	-	-	-	-
29. Harassment	-.142	-.064	-.106	.324	1	-	-	-
30. Self-Esteem	.054	-.091	-030	-.020	.035	1	-	-
31. Mastery	.037	-.132	-.052	-.094	-.011	.569	1	-
32. Active Coping	.147	-.028	.088	.081	.007	.347	.344	1
33. Avoidance Coping	-.041	.077	-.071	.071	.062	-.362	-.375	-.268
34. Self-esteem @ 18	.079	-.003	.011	-.080	-.020	.364	.261	.225
35. Mastery @ 18	.116	-.013	.075	-.056	-.029	.242	.350	.200

Correlation Matrix, continued			
Variable	33	34	35
1. Depression	-	-	-
2. Job Strain	-	-	-
3. Job Security	-	-	-
4. Financial Security	-	-	-
5. Work-Life Conflict	-	-	-
6. Life-Work Conflict	-	-	-
7. Unpaid Overtime	-	-	-
8. Physical Environment	-	-	-
9. Supervisor	-	-	-
10. Earn Deserve	-	-	-
11. Overqualified	-	-	-
12. Coworker SS	-	-	-
13. Supervisor SS	-	-	-
14. General SS	-	-	-
15. Gender	-	-	-
16. Age	-	-	-
17. Education	-	-	-
18. Marital Status	-	-	-
19. Household Income	-	-	-
20. Eldercare	-	-	-
21. Minority Status	-	-	-
22. Physical Disability	-	-	-
23. Clerical Worker	-	-	-
24. Technical Worker	-	-	-
25. Mgmt. & Professional	-	-	-
26. Full-time	-	-	-
27. Job Status	-	-	-
28. Discrimination	-	-	-
29. Harassment	-	-	-
30. Self-Esteem	-	-	-
31. Mastery	-	-	-
32. Active Coping	-	-	-
33. Avoidance Coping	1	-	-
34. Self-esteem @ 18	-.238	1	-
35. Mastery @ 18	-.232	.652	1